

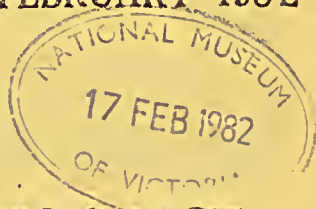


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VOL. 12 NO. 1

FEBRUARY 1982



VICTORIAN ENTOMOLOGIST



BINDER — FIX TO FIRST PAGE

Registered for posting
as a periodical Category B
price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist". The Society encourages corporate membership of schools and study groups, of libraries and of University and departmental staff.

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Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

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MINUTES OF THE GENERAL MEETING, 11 DECEMBER 1981

17 FEB 1982

The President, P. Kelly, opened the meeting at 8.10 pm and welcomed Dr. & Mrs. Ross Field on their return to Melbourne after three years in California. He also welcomed Dr. Bill Ruesink, visiting from Illinois.

Apologies: G. & J. Burns, K. & L. Dunn, J. Hallgarten, D. & J. Holmes.

Attendance: Mesdames J. Field, D. Johnson, D. New, M. Le Souëf, C. Stahl, N. Stewart; Messrs. P. Carwardine, R. Condrón, D. Crosby, R. Field, M. Hunting, J. Le Souëf, T. New, D. Stewart, I. Watkinson.

Minutes of previous meeting: Deferred due to delay in Journal circulation caused by Postal Strike.

Correspondence: Bulletins from The Queensland Entomological Society, Australian Entomological Society and Entomological Section of the Royal Zoological Society (NSW), Ecos, Annual Report of the Ian Clunies Ross Memorial Foundation. Received (J. Le Souëf, J. Field).

Treasurer's Report: Following recommendation from Council, R. Condrón reported that \$1000 had been transferred to a fixed term deposit account. Current account balances are \$394.24 (general) and \$270.50 (publications). There are 66 financial members. Accepted (R. Field, M. Le Souëf).

Editor's Report: More articles are needed for forthcoming issues of the Journal.

Excursions: T. New commented on the Melville Caves excursion. Although few members participated, a useful and interesting day resulted. Butterflies flying included Ogyris amaryllis, O. olane, Vanessa kershawi, Delias aganippe, and a number of antlion larvae, beetles and parasitic wasps were also captured.

P. Carwardine requested suggestions for further excursions later in the season. The Mt. Disappointment area was suggested, and possible support for a day trip will be sought at the February meeting.

General Business

The main business of the evening was a series of slide exhibits by members, as follows:

T.R. New: lifehistory of the Vine Moth (Glycine phalaenoides) and parasites; gum-leaf skeletoniser moth (Uraba lugens), and miscellaneous insects.

P. Kelly: life cycle of Paropsis, showing the unusual form of egg deposition.

R. & J. Field: series of slides of (1) Yellowstone National Park (2)

Overwintering of Danaus plexippus in California and (3) scanning electron micrographs of Ogyris pupae, to indicate some of the elaborate surface structures.

Z. & M. Le Souëf: a selection of slides including insects, localities and entomological personalities.

D.F. Crosby: early stages of butterflies, and some unusual adult aberrations, including gynandromorphs.

The formal meeting session was closed at 10 pm, with the President wishing all members and friends the Compliments of the Season. An enjoyable session of informal talk over light refreshments ensued.

A COLLECTING TRIP TO MARYBOROUGH, QUEENSLAND

by K.L. Dunn

On the 26th November 1981, following a rushed packing job, (having just completed my Year II examinations only a few days earlier), I boarded a Douglas D.C.9 flight to Queensland. On arrival in Maryborough, I was greeted by Ray and Ian Manskie, but all was not well. I was startled to discover that my luggage, including all collecting materials, had been incorrectly labelled by the airline, and was consequently still in Brisbane!

The following day - after a restless night - my gear arrived and Ray and I travelled out to the nearby Teddington Weir in search of *Protographium leosthenes*; a fairly common, but local species. Much to Ray's amazement (and my own!) a large freshly emerged female was immediately netted beside the road. Between us nine males were captured, most being in reasonable condition. The species appeared a rapid flyer and in flight resembled a worn *Graphium eurypylus lycaon* with which it was frequently found in association. Unlike *G. eurypylus*, *P. leosthenes* would often "float" around the base of trees and shrubs in the rainforest. Teddington Weir also appeared a good locality for the "common White-spot Skipper", *Trapezites petalia* which flew with the abundant *Toxidia peron* and the smaller *T. parvula*.

In areas around Maryborough where the broad-leafed *Acacia cunninghamii* grew profusely, a search was made for the attractive *Hypochrysops delicia delicia*. Both in the adult's appearance, and the behavior of the early stages, specimens from Maryborough distinctly resembled *H. d. duaringae* from northern and central Queensland rather than typical *delicia* from localities further south. Although ants of the genus *Crematogaster* were present on suitable saplings, no specimens of *H. delicia* were discovered. As a compromise, three species of *Jalmenus* were observed breeding nearby. These included *J. ictinus*, *J. evagoras evagoras*, and the less common *J. daemeli*. It is interesting to note that both *J. evagoras* and *J. ictinus* bred less abundantly in Maryborough than in southern localities.

Whilst subsequently rearing larvae and pupae of *J. daemeli*, it was noted that two distinct pupal forms existed: a brownish pupae with darker mottled patterns and orange veins on the wing cases, similar in appearance to *J. evagoras* pupae; and a more common pale form which varied in color from yellowish brown to yellowish brown with green abdomens, and a few small black spots on the otherwise pattern-free wing cases. Both pupal varieties could be readily distinguished from each other immediately after pupation, but produced identical adults. Common and Waterhouse (1981) record the larvae of *J. daemeli* to be brown and the pupae, "brown or dark brown with black mottled patterns"; this description agrees with the "dark form" mentioned above. No mention is made of any record of pale pupae, and furthermore, larvae producing the yellow and green pupae, were in contrast basically green with some lateral brown markings. These larvae appear to resemble those of *Jalmenus pseudictinus* as described in C. and W. (1981), but the adults produced were readily identified as *J. daemeli* by the pale markings beneath the wings.

After a further disappointing search for *H. delicia*, Ray introduced me to his companion Joe Manski, renowned as a local authority on lepidopterous food-plants. As a result of much information gained from both Ray and Joe, I was enabled to obtain ova, larvae and pupae of many northern species. These included; *Graphium eurypylus*, *G. sarpedon*, *Papilio aegeus*, *Danaus hamatus*, *Polyura pyrrhus sempronius*, *Acraea andromacha*, *Phaedyra shepherdii*, *Delias argenthona*, *Syntarucus plinius pseudocassius* and *Candilides absimilis*. Although tachnid fly parasitization accounted for a large toll, especially amongst the Papilionidae, many were reared successfully.

After sighting a couple of *Ogyris amaryllis hewitsoni* flying across the Manskie's property, our interest in this species was aroused and a daring expedition to the local mosquito and crocodile infested, Saltwater Creek was attempted. Although Ray had formerly taken several adults amongst the mangroves on which the mistletoe, *Amyema machayense*, grew profusely, no signs of the species presence could now be found. Many mosquito bites later, we abandoned the search, virtually empty handed, except for a few specimens of *Nacaduba kuraua parva*, *Candilides margarita*, *C. acastus* and the ubiquitous *Danaus affinis*.

In early December, Ray, Nola, Joe and I had a most enjoyable outing to an island-like rainforest community at the Mary River Heads. This locality, although very small in area, proved an excellent collecting ground, and appeared to me, reminiscent of the tropical jungles found north of Mackay. At a quick glance the air appeared to be clouded with common species such as *Anaphaeis java teutonia*, *Graphium eurypylus*, *G. sarpedon* and *Appias paulina ega*, fluttering along the forestry road. On closer observation, many unusually yellow colored female *G. eurypylus* were noticed flying slowly above *Raywen hoffia* vines and other native food plants, and occasionally ovipositing upon them. Furthermore, a few *P. leosthenes* were sighted darting rapidly, with tails outstretched, across pink and yellow lantana flowers before disappearing amongst the tangle of undergrowth. Another common species, *Nacaduba berenice berenice* often appeared "flashing" around the tips of small trees. *Papilio aegeus* was also quite plentiful and very occasionally alone *P. fuscus capaneus* would glide overhead. Nearer the shore amongst salt water Mangroves, several males and one female of *Hypochrysops apelles* were observed settling on prominent leaves and twigs. Ray also managed to uncover a half grown larva hiding in a curled leaf of the local food plant, *Avicennia marina* variety *resinifera*.

An isolated scrubby rainforest habitat amongst extensive dry open-forest west of Maryborough, proved by far to be the most successful collecting ground in the Maryborough district. This area could easily be labelled the "headquarters" of *Protographium leosthenes*. With both males and females flying in approximately equal numbers, *P. leosthenes* was the most abundant species on the wing, even outnumbering the numerous *G. eurypylus*. On one occasion a large female *P. leosthenes* was sighted laying on the vine. *Raywenhoffia leichardtii*. A search was made for larvae and pupae, but only the single ovum observed being oviposited was discovered. In addition skippers were plentiful and species recognised included: *Neohesperilla zanthomera*, *Toxidia peron*, *T. parvula*, *Ocybadistes flavovittatus flavovittatus* and *Taractrocera ina*. I was most fortunate to net a specimen, which at first glance, superficially resembled an oversized *Tisiphone abeona abeona*. This turned out to be a melanic aberration of a female *Hypolimnas bolina nerina* which was entirely dark brown except for an enlarged orange subternal patch on the forewings. In contrast to the abundance of species in the other families, very few lycaenids were taken; the only common species being the

"white lineblue", *Nacaduba kurava parvia*, frequently seen settling on exposed leaves amongst the undergrowth.

EPILOGUE

As most insect enthusiasts are well aware, the majority of forest areas in Queensland which are not under the control of the National Parks and Wildlife Service are owned by the State forestry commission, where collecting is taboo. "NO NETS" signs are omnipresent. On one occasion Ray and I returned to the already pathetic remnant of lush rainforest at the River Heads to replenish our larval food supply. On arrival, we were both dismayed to see that a full three metres of virgin forest on both sides of the forestry road had been carelessly vandalised by a grader. Numerous larval host plants, which were previously well endowed with insect life, lay wilted or already dead amongst the broken trunks and disturbed soil.

"NO NETS"?? - Should be spelt "NO GRADERS"!!

ACKNOWLEDGEMENTS

I wish to thank Mr and Mrs R.C. Manskie for their hospitality and assistance during my stay in Maryborough and also to Mr M.J. Manski for the identification of many food plants.

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ANGUS AND ROBERTSON, MELBOURNE.

MANSKI, M.J. (1960) - Food Plants of Some Queensland Lepidoptera
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THE CLENCH METHOD OF RELAXING AND SPREADING BUTTERFLIES
FOR THE COLLECTION

By Norman B. Tindale

(Hon. Associate, South Australian Museum, Adelaide)

Spreading butterflies for the collection after a field trip can be a chore, especially when they have dried out and need careful relaxing in a damp atmosphere, over some days. Even the best of relaxing containers are a nuisance to keep at the proper degree of humidity and free from mould.

Some years ago, while at the Carnegie Museum in Pittsburgh, Pennsylvania, I learned from the late Harry Clench of a method he had adopted for instant relaxing. This had proved to yield very satisfactory results for spreading butterflies and had even been used, with care, for moth species such as sphingids, cossids and hepialids. Nothing looks better than a carefully spread freshly caught specimen, but the Harry Clench method is very useful for study collections where perfection can only be approached, not generally attained, in the preparation of specimens.

Take your butterfly carefully from the envelope in which it has travelled from the field and, holding it with a pair of insect forceps, dip it carefully into a small dish of 70% alcohol so that only the body and the antennae and legs are wetted. Some alcohol will inevitably creep up the wings, but excess alcohol should be quickly blotted off with a piece of lintless tissue paper. Another method may be adopted - of touching the body, the antennae and legs with an alcohol-dampened brush. I often lay the specimen on tissue paper for some moments before the next stage.

Have prepared a dish of warm water such as comes directly from the usual hot water heater. Holding the specimen with forceps or in the fingers as in the earlier procedure, dunk it so that the bases of the wings, the legs and especially the whole of the antennae are wet. Since water will tend to creep up the wings, laying the specimen quickly on the tissue or between two layers of it will prevent oversaturation of the wings. Usually after several minutes it is advisable to repeat the process. After a second use of the tissue as a blotter, it will be found that with a little manipulation of the bases of the wings, adhesion of the fore and hind wings can be ended

and the relaxed butterfly is ready for pinning and spreading in the usual manner.

When pinning such specimens, I have found it advisable to push the pin through the thorax until its head is close to the insect. I then apply just a touch of a white glue, such as Elmer's, to the pin before drawing it up into the correct position. This procedure will obviate any tendency for the specimen to rotate on the pin when it is dry.

Specimens spread in this manner should be left on the spreading board at least overnight to dry, or even for a couple of days in winter.

Having spread many hundreds of specimens in this manner, I find it expeditious and very satisfactory. My spreading technique is only average, and I must confess that I often use four minuten pins to hold the wings in position while covering them with paper strips. Perfectionists may well decry such a practice, but only critics with eagle eyes can detect the resulting tiny pin holes in the dried specimen if the pins are carefully placed, and removed as soon as the paper braces are in position.

Having described the Harry Clench method to J.C. ('Zoo') Le Souef, he has asked me to give an account of it so that others may test whether the method is helpful to them in preparing series of specimens taken during a field trip.

For those who adhere to the older method of relaxing specimens, the use of a small amount of the chemical Chlorocresol BP has worked wonders in preventing mould in the relaxing container, even though it tends to extend the time a little until the specimens are ready to spread because there is less decay of the muscle tissues at the bases of the wings. All of us owe a debt to lepidopterist Robert H. Fisher, who first introduced us to the use of this mould deterrent. Some twenty years ago (1961, J. Lepidopt. Soc. 15: 195-197), I gave an account of the use of this chemical under the title 'The Chlorocresol method for Field Collecting'. Some comments on this may be of interest. Basically, the method involved sealing in containers of freshly taken specimens in their envelopes with sufficient chlorocresol to prevent any deterioration, even though the specimens tended to remain relaxed for periods of several weeks under favourable conditions. The drill today has become centred around the roughly 12x12 cm plastic boxes which are now commonly available as lunch boxes. But the best size seems to be about 4 cm high. We place

a saltspoonfull of the chlorocresol within a ring of white glue on the bottom of the box after writing (mirror image) on the bottom, inside, the words 'charged with chlorocresol' and the date. A charge may last for more than a year. The chemical is sealed by placing over it a piece of lintless tissue paper covering the bottom of the box. If envelopes are kept in this box, they will become impregnated with enough of the chemical that they are ready for use, although this is not necessary for the effectiveness of the method.

Plastic lunch boxes are sufficiently airtight that little moisture is lost. Even so, the boxes should be sealed with tape at the end of the days collecting, or when full.

The chlorocresol prevents any deterioration of the specimens. In working in a desert environment one of our researchers found that the air was so dry that a few papered large grasshoppers yielded sufficient humidity that the butterfly and moth specimens remained excellently relaxed. The only hazard we have encountered was in the early days when tobacco tins were in use, and a box was left inadvertently in the hot sun. The chlorocresol volatilised and, as the box cooled, settled on the specimens - to their detriment. Specimens held in this manner remain so flexible that they can withstand well the handling the boxes may get when sent through the post. Transferred to a relaxing container such specimens quickly become like fresh material.

ENTRECS NOTES

by D.F.Crosby (ENTRECS Scheme Coordinator)

The following is a list of entomologists who have volunteered to provide data for the scheme, and who have been provided with instruction manuals and reference numbers.

Name	Number	Interests
Atkins, A.F.	A005	Butterflies
Barrett, V.J.	A018	Butterflies
Besserdin, R.	A028	Butterflies
Bishop, A.D.	A012	Butterflies
Burns, G.	A008	Coleoptera

Name	Number	Interests
Crosby, D.F.	A001	Butterflies
Dunn, K.	A030	Butterflies
English, J.R.	A020	Odonata
Field, R.P.	A022	Butterflies
Fisher, R.H.	A013	Butterflies
Hallgarten, F.	A010	Coleoptera
Holmes, D.	A011	Lepidoptera
Hunting, M.	A025	Butterflies
Hutchinson, J.F.	A004	Odonata
Johnson, D.	A032	Coleoptera
Johnson, S.	A031	Butterflies
Kelly, A.	A021	General
Kelly, P.G.	A009	Chrysomelidae
Kinsella, A.J.	A015	Butterflies
LeSouëf, J.C.	A006	General
McCubbin, C.W.	A003	General
McEvey, S.	A023	Butterflies
Manskic, R.	A019	Butterflies
Morton, D.E.A.	A014	Butterflies
New, T.R.	A024	Neuroptera
Owen, A.B.	A017	Lepidoptera
Quick, W.N.B.	A002	Butterflies
Rogge, O.H.	A007	Hymenoptera
Rouse, A.J.	A016	Butterflies
Vagi, R.	A029	Lepidoptera
Williams, P.	A026	General

Members who require further information, handbooks, record sheets etc. should contact me.

Council has decided to concentrate on the preparation of distribution maps for butterflies in Victoria, as the majority of members seem able to assist with this group, and initially to tackle the families Pieridae and Papilionidae. Nigel Quick has prepared provisional distribution maps for species in these families, and these maps are in the course of being updated. IF YOU HAVE NOT ALREADY DONE SO, PLEASE SUBMIT YOUR RECORDS OF THESE FAMILIES.

THE SOCIETY'S LIBRARY

Many members may not be aware that, over the years, the Society has acquired (through gift, exchange and accumulation) a substantial library of papers and Journals on Australian entomology. This is at present housed at La Trobe University and occupies about twenty file boxes. It contains many publications from our sister entomological societies in Australia.

Members wishing to borrow material from the library, or with queries on detailed contents are invited to contact me. Particular journal issues can easily be brought to meetings, or I can (subject to adequate notice and time!) sort our library for information on particular topics for members.

T.R.New

Book Notice. Handbook of Insect Collecting by Courtenay Smithers. 1981 (Reed, \$14.95)

This book contains a great deal of very sound advice for both beginners and more experienced entomologists, but has its greatest potential as an introduction to insect structure, principles of identification, rearing and collecting. All aspects of the latter topics are covered, and there are clear photographs or drawings of most of the apparatus discussed. Many whose collecting has been limited to 'the net' will find information on other techniques likely to enhance their returns in the field. Sections on mounting, labelling, storage and preparation for microscopical examination are also included, and the book concludes with a key to orders (couched in simple terms) and a short list of 'further reading'.

Altogether, good value. Dr Smithers has utilised his considerable field experience in producing a book which deserves to sell widely. If one has to quibble, I would like to have seen some further comments on insect conservation - especially possible dangers of overcollecting, and the very real Australian situation of continued habitat destruction and its ramifications. Some years ago, the Royal Entomological Society of London set up a Committee which produced a well-considered 'code' for insect collectors. Inclusion of this as an appendix in later editions of this book could do much to alert collectors in Australia (and elsewhere) to the responsibility they have to conserve our fauna.

T.R.New

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President-Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659
Telephone-(057) 928230.

Vice-Presidents

Peter Carwardine, 2a Vistoria Rd. Malvern.
Telephone-2118958
Gordon Burns, 3 Inglis St., Mornington
Telepheno-(059) 753730

Hon. Secretary

Dr. Tim Now, Zoology Dept., La Trobe Uni., Bundoora
Telephone 7181007, (home) 4792247 (uni)

Hon. Treasurer

R. Condron, 96 Shannon St., Box Hill Nth.,
Telephone 886300

Hon. Editor

J.C. LeSouëf, P.O. Box 2, Blairgowrie, 3942
Telephone-(059) 888413.

Excursion Secretary

Peter Carwardine, 2a Victoria Rd., Malvern, 3144
Telepheno-2118958 (home), 5090622 (office hours)

Immediate Past President

David Stewart, 15 Vale St., West Rosebud
Telephone-(059) 862705

Councillors

Mesdames Joy Burns, Mary Le Souëf, Dorothy Johnson, Messrs
David Crosby, Ken Walker, John Hallgarten.

--ooOoo--

DIARY OF COMING EVENTS

February 19, 1982, Forum

April 23-General Meeting, Speaker Ken Walker on Native Bees.

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ENTO
P 595.705
V645

VOL. 12 NO. 2

APRIL 1982



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as a periodical Category B
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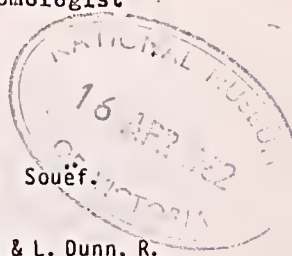
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MINUTES OF THE GENERAL MEETING, 19 FEBRUARY 1982



The President, P. Kelly, opened the meeting at 8.10pm.

Apologies: J. Hallgarten, D. & J. Holmes, D. Johnson, J. & M. Le Souëf.

Attendance: Mesdames J. Burns, J. Field, C. Stahl, N. Stewart;
Messrs. R. Besserdin, G. Burns, P. Carwardine, D. Crosby, K. & L. Dunn, R. Field, F. Hallgarten, M. Hunting, G. Milledge, T. New, D. Stewart, K. Walker, A. Yen.

Minutes of previous meeting: Minutes of the October (Crosby/D. Stewart) and December (J. Field, D. Stewart) general meetings were confirmed.

Correspondence: Bulletins from the Queensland Entomological Society (2), Entomological Section off the Royal Zoological Society (NSW) (2), Journal of the Australian Entomological Society, Ecos, several enquiries regarding membership. Received (R. Field, J. Burns).

Treasurer's Report: Deferred

Editor's Report: T. New reported on production of the February Journal. It is hoped that more members will write articles or short notes for future issues.

Excursions: After some discussion, led by P. Carwardine, it was decided to proceed with a one day trip to the Mt. Disappointment area on Sunday Feb. 28.

General Business

The main business of the evening was a series of exhibits/short talks by members, as follows:

P. Carwardine: A copy of the book 'Butterflies of the Neotropical Region, Part I', by B.D. 'Abrera.

K. Dunn: Two drawers of butterflies (Papilionidae and Pieridae) including some captured or reared on his recent trip to the Maryborough area. He commented on unusual features of some specimens.

M. Hunting: (i) a series of butterflies from the Portland area of Western Victoria, including Tisiphone abeona antoni, Delias aganippe and Hesperilla donyssa. He commented on the apparently poor season for butterflies in that area, a view shared by D. Crosby.

(ii) Series of saturniid moths from Brown Mountain (NSW) and of Hepialidae (Trictena argentata) from E. Gippsland. The latter were taken during a mass flight after the first heavy rains in May 1980.

D. Crosby: (i) details of net handle and frame construction using aluminium rods. The exhibit was illustrated by blackboard drawings and promoted lively discussion on many aspects of net construction.

(ii) several small items of useful equipment - including Cresson pinning forceps, a pin vice, and scalpel, together with a large catalogue of Natural History equipment issued by Wards (USA).

T. New: Slides of an unusual lacewing larva belonging to the family Nymphidae.

J. Burns: Slides, mainly from a recent trip to Queensland, including lepidopterous larvae, beetles, cicada and entomologists.

C. Stahl: A pair of the birdwing butterfly, Ornithoptera brookiana.

The meeting closed at 9.45 pm.

Minutes of Council Meeting held at Clunies Ross House

12 March 1982.

Chaird by P. Kelly.

Apologies - J.C. & M. Le Souëf, D. Johnson.

Present- J. & G. Burns, P. Kelly, T.R. Now, K. Walker, D. Stewart, D. Crosby, P. Carwardino. (By invitation, R. Besserdin).

Minutes of the last Council Meeting (September 1981), were confirmed: K. Walker/D. Stewart.

Correspondence : Accepted. G. Burns/J. Burns.

Treasurers Report : Deferred.

Excursions : P. Kelly commented on the success of the Mt. Disappointment excursion. P. Carwardino said that returns of specimens were somewhat disappointing.

General Business: J. Le Souëf has expressed a desire to step down from the editorship. K. Walker is willing to take on this position for any period before the the Annual General Meeting.

Discussion was held over the possibility of instruction meetings in basic entomology. The
ii. suggestion was made that an extra meeting in September be organised to accomodate a general instruction session on insect external structure

iii. Meeting date: P. Carwardine suggested the possibility of changing meeting date from the 'second last Friday of even months' to the third Friday of even months

iv. D. Crosby drew Council's attention to the World Wild life Fund's project on distribution of W.A. Buprestidae.

The meeting closed at 9.45 P.M.

A VISIT TO SOUTH EASTERN QUEENSLAND AND COASTAL NEW SOUTH

WALES.

by K.L. Dunn.

During December 1981, following a visit to the Manskies at Maryborough, Queensland and with the temperatures still pleasantly in the low 30 s, I began my coastal collecting trip. I travelled east through the picturesque Tuan forest to Rainbow Beach, a seaside resort providing access to the nearby Fraser Island. To the average tourist, the multicoloured sandstone cliffs, from which the area received its name, are the major attraction; however, my primary purpose was to investigate the butterfly fauna of the nearby rainforest. The forest in this district did not appear as luxuriant as in other coastal areas with correspondingly fewer species being observed. Red Ash trees (Alphitonia excelsa) were quite plentiful throughout the forests and consequently the 'small green-banded blue', Danix hymetus taygetus was found to be common, especially females, in the vicinity of the foodplant.

In the evening, I was fortunate to take a perfect female of the crepuscular owl, Hasora rhoda haslia flying at a light near the rainforest. The specimen appeared rather unusual in that the transverse white band on the hindwing verso was broader than normal and approached very closely that of H. hurama. In fact, whilst at rest, the specimen superficially resembled this species. On closer examination, however, it was revealed that the forewings possessed pale yellow hyaline spots and that the white transverse band beneath was interrupted near the tornus-typical of H. rhoda haslia. It is interesting to note that H. hurama has only recently been recorded within the known range of H. rhoda and, furthermore, in this very district (M. De Baar, 1977). It is therefore possible that accidental hybridization between these two isolated species may explain the seemingly "intermediate" specimen. Such an event is very rare in nature, but appears to occur more often when two very closely related species inhabit the same locality.

In the hope of collecting some specimens of the local form of Acrodipsas cuprea in the Neosa district, a track was made up through open forest to the rocky summit of Mt. Tinbeerwah. Many species were soon to be hill-topping, the most abundant being the rapid flying Graphium sarpedon and G. macleayanum. Other species represented included Delias argenthona, Elodina parthia, Acraea andromacha, Trapezites elienna and Toxidea peron. In addition a single male of the relatively scarce Neohesperilla xanthomera was captured whilst in aerial combat with a specimen of T. peron. On the lower slopes several misletoes (Amyma sp.) were noticed growing on Eucalypts. It was expected therefore, that a few Ogyris species might be resident, but surprisingly only a single large female was sighted (either O. genoveva or O. zozine). Theclinestas miskini (Acacia feeder) was common, but only two male specimens of the elusive ant-blue, Acrodipsas cuprea were netted, both being in reasonable condition.

A glance at the horizon indicated an accumulating mass of cumulus-nimbus storm clouds, but I was able to make a quick visit to several scenic (usually) lookouts in the Montville district, an area west of Nambour. Despite the dismal weather conditions which now prevailed, several Graphium sarpedon, G. macleayanum, Eurema brigitta and the darkly marked Prosotas felderi were flying. I was also interested to take a male Jalmenus evagoras as it fed at a flowering plant. The specimen appeared to be hill-topping, an unfamiliar behaviour trait in the genus Jalmenus. No further specimens were observed and its breeding grounds were not discovered in the short time available.

The Tamborine Butterfly Farm was the most obvious attractant for any lepidoptera enthusiast. On arrival, however, I was informed by Garry Sankowski that the business had been sold and he was due to depart for Maroocha in northern Queensland, later the following week.

Tamborine Mountain, a section of the Darlington Range (a long spur of the Meephorson Range) consists of several National Parks, including Witches Falls, Cedar Creek Falls, Palm Grove, The Knoll, Jealaleh, MacDonald Park and Macrozamia Grove. Of these The Jealaleh National Park, an area of dense sub-tropical closed forest proved to be particularly interesting. Although it was early in the morning with much of the rainforest in shade, the canopy, thickly laden with various species of orchids and ferns, appeared a hive of activity. Most of the insects were high up but several were noticed fluttering through the massive strands of forest and others feeding at the extensive patches of lantana bordering the park road. Two notable species were the birdwing, O. richmondia, and the unique skipper, E. rafflesia. A fresh aberration of E. rafflesia was observed with its wings outstretched sipping nectar from a lantana flower. In this specimen the brilliant orange markings had been replaced a distinct white coloration.

With perfect weather conditions, a visit was made to O'Reilly's Green Mountain Resort in the jungle clad Lamington National Park but on arrival I was very surprised to find very little on the wing. The only common species recorded was O. richmondia, of which many males and several females were sighted gliding along the perimeter of the rainforest. Males of this species appeared in reasonable condition but all the females were comparatively worn having obviously been on the wing for a much longer period. The abundance of O. richmondia was not surprising since its foodplant Aristolochia praevonosa was growing abundantly amongst the forest canopy. Fortunately a more diverse selection of species was to be found in areas outside the park boundaries. These included the genera Graphium, Elodina, Delias, Appias, Nacaduba and Erysichton. Overall, the Lamington region proved quite disappointing.

My visit to the Gold Coast was climaxed by a most pleasant afternoon with Alex. Burns at Burleigh Heads. He is renowned for possessing the largest private collection in Australia. It comprises 120 drawers and 90 storeboxes containing over 50000 specimens.

The weather again deteriorated and no material was taken between Burleigh and Ballina in northern New South Wales. A visit to Dr. Grant Millor was most rewarding, but unfortunately as time was now limited and with the prevailing wet weather hindering collecting, I was unable to investigate some of Grant's 'stamping ground'. From Coff's Harbour I toured the Dorrigo and New England district. The main aim in this region was to take some of the mountain form of Tisiphona abeona regalis and a few of the local Hesperilla crypsargyra hopsoni. The New England National Park was completely concealed in heavy cloud. As a result no specimens of either species were to be found. A selection of Jalmenus evagoras pupae were taken, however, at Dorrigo. The following day the sky cleared and some profitable collecting was accomplished amongst the open forest which dominates the upper slopes of Mt. Coramba. On the summit Graphium sarpedon, G. macleayanum, Delias nigrina, Toxidea peron and Candalides consimilis were found to be most abundant. In addition some less familiar species were also flying. These included the evasive Protographium leosthenes, Tisiphona abeona morrisoni, Netrocoryne repanda and the attractive Hesperilla mastersi.

Whilst travelling to Sydney, a short time was available to search for the hybrid variety of the Swordgrass Brown, Tisiphona abeona 'joanna' near Port Macquarie. Although it was late in the afternoon and nimbus clouds were again rapidly obscuring the sky, I was lucky to disturb several adults from the dense clumps of the larval foodplant, Gahnia sieberiana on which they frequently appeared to rest. Later a captive female was induced to lay three bright green ova from which some ten days later small yellow larvae subsequently hatched.

According to the meteorological bureau, Canberra was recording the most suitable weather conditions in southern New South Wales so this became my final stop en route to Melbourne.

A visit was made to Mt. Ainslie for a few of the "golden" Canberra version of Acrodipsas cuprea, but being late in the afternoon, Hypochrysops delicia dolos had become the dominant species. My collecting trip concluded with the taking of several Jaumesus ictinus larvae, pupae and imagoes near Black Mountain. Finally, I paid a visit to Andrew Atkins at the A.N.I.C. where I had the opportunity to again meet Dr. Ian Common.

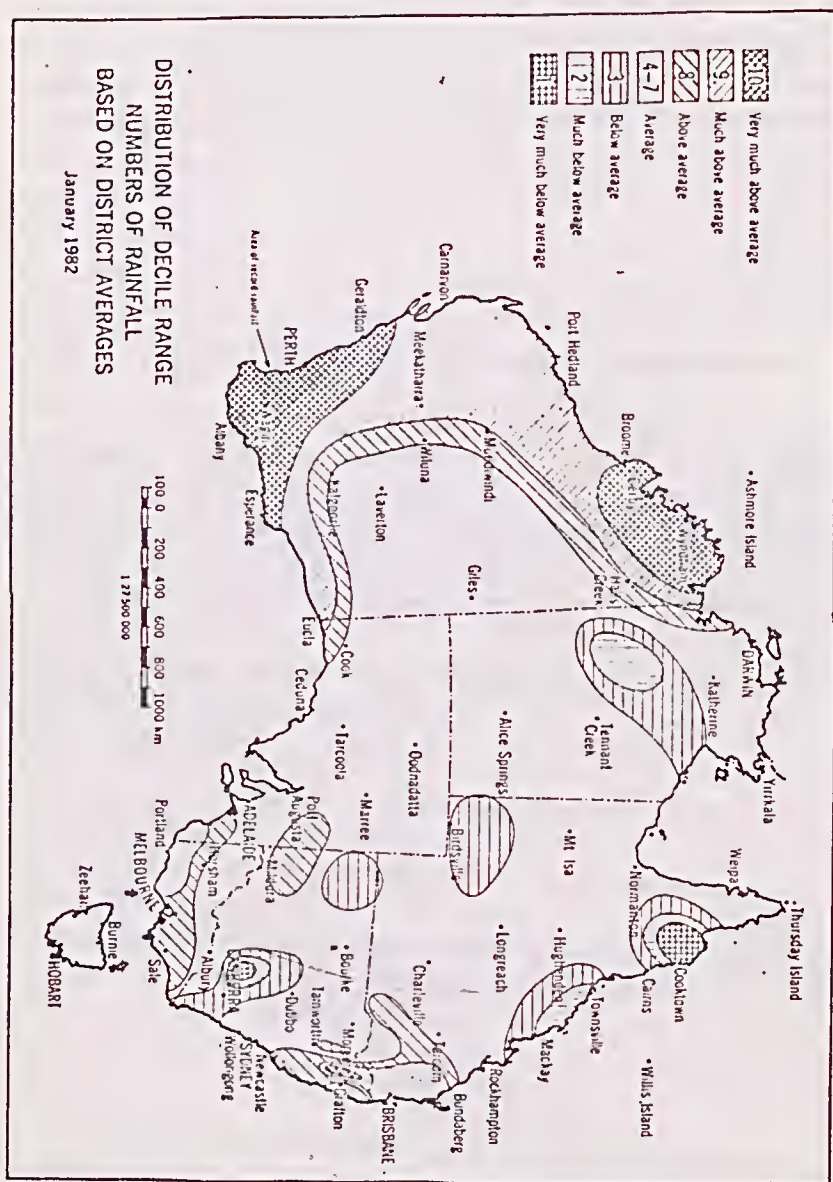
NOTE ON COMMON ALBERTROSS - APPIAS PAULINA EGA (BOISD)

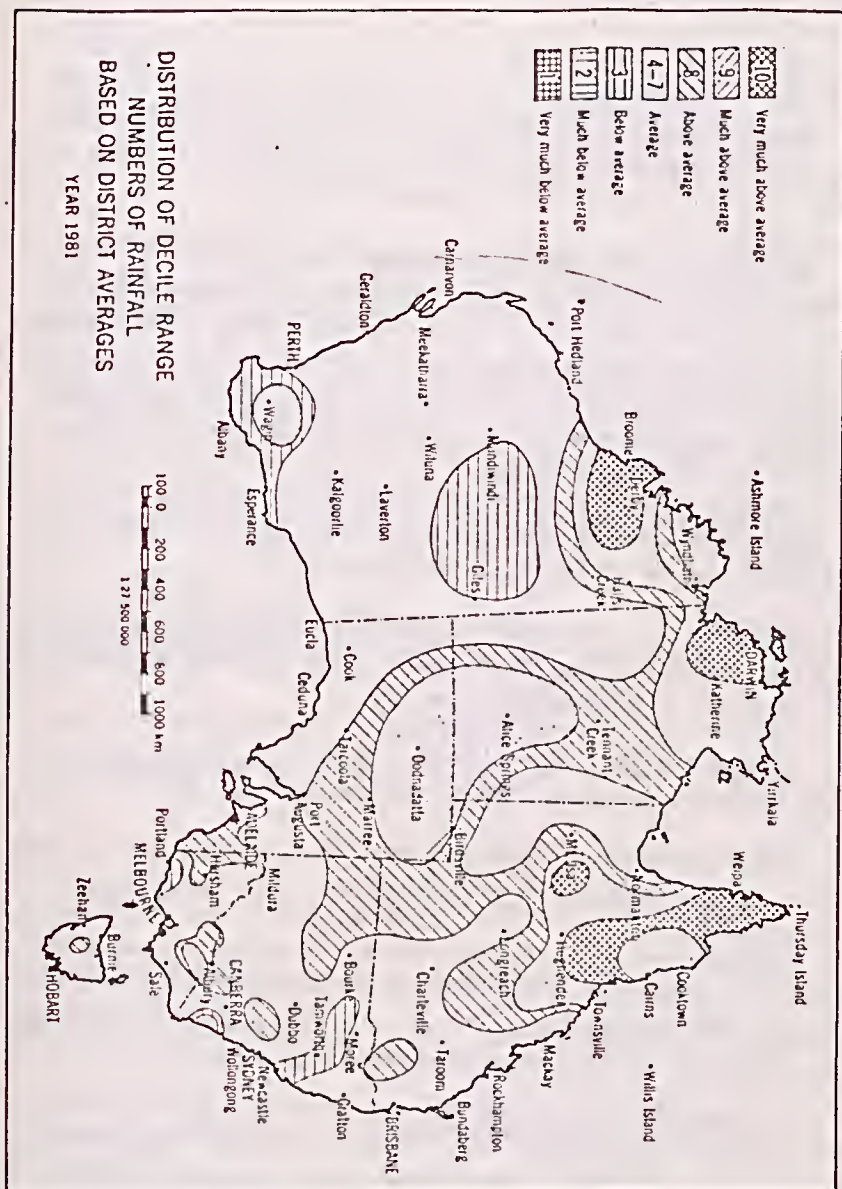
A female common Albertross was taken at Pakenham, approximately 50 km east of Melbourne, in early January, 1982. It was collected by 7 year old Danny Penn who noticed it while watching Cabbage Whites (Pieris rapae (L)) in his father's vegetable garden. Sharp eyed Danny noticing the difference this butterfly displayed was quick to get the net and capture it before it disappeared. Good work for a young lad who has only been collecting for a few months.

I have lived in Pakenham for 30 years and have never seen this species in the district before. It is not known whether any males were present as the similarity of the male to the Cabbage White would make it difficult to detect for the novice collector.

K. G. ROOK
PAKENHAM 17/3/82

Reference: Butterflies of Australia - Common & Waterhouse.





ON THE GRAPEVINE.

Our President Peter Kelly is on top of the world. He's just moved into his country estate, fiftyfive hassle free minutes drive from his office. He is more than looking forward to his retirement when he can devote his time to the more important things of life in the entomological sphere.

Nigel Quick has now settled down in Kuranda. As the cottage is small, he has purchased a house in Edge Hill, Cairns, as well, commuting between one and the other when the occasion arises. The Edge Hill address is 12 Hall St. Southerners will be envious of his report of a recent emergence of the giant hercules^{moth}/as well as the local emperor gann, Anthoris janotta.

The Society's congratulations go to Pat Marks on her recently being presented with the Natural History Medallion, the highest award of its kind in Australia.

Although spending much of his time still at Burnloy, Ross Field is also in charge of the Biological Control section of Koith Turnbull Institute at Frankston.

Andrew Atkins tried out his "new" Hiace recently with a trip down the coast as far as Mt. Dromedary.

Very belated congratulations to Ken Walker on his award of MSc. by the University of Queensland in November last.

Despite the very comprehensive information contained in his Butterflies of South Australia, Beb Fisher is still busy adding to the knowledge of the local fauna. He has just made a survey of the species found on Kangaroo Island.

In Kelynn Dunn's story, it was interesting to read of his meeting with Joe Manski. What a thrill it must have been for Joe to again do some collecting, this time with a much younger generation. His visit to Alec Burns, too, must have stirred the memories of the earlier days.

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For those interested in obtaining the Monthly Rainfall Review direct, the cost has risen since the note in the October Vic. Ento. The Review is available from the Department of Science and Technology, Bureau of Meteorology, G.P.O. Box 1289, Melbourne. The cost is now \$11.50 for the annual subscription starting Jan. 1.

.....

On a personal note, may I express my deep appreciation for the many enquiries and good wishes concerning the state of my health. Thankfully, I'm on the mend again and should soon return to normal activities.

J.C. Le Souëf.

.....

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President-Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659
Telephone-(057) 928230.

Vice-Presidents
Peter Carwardine, 2a Victoria Rd. Malvern.
Telephone-2118958
Gordon Burns, 3 Inglis St., Mornington
Telephone-(059) 753730

Hon. Secretary
Dr. Tim New, Zoology Dept., La Trobe Uni., Bundoora
Telephone 7181007, (home) 4792247 (uni.)

Hon. Treasurer
R. Condron, 96 Shannon St., Box Hill Nth.,
Telephone 886300

Hon. Editor
J.C. LoSouëf, P.O. Box 2, Blairgowrie, 3942
Telephone-(059) 888413.

Excursion Secretary
Peter Carwardine, 2a Victoria Rd., Malvern, 3144
Telephone-2118958 (home), 5090622 (office hours)

Immediate Past President
David Stewart, 15 Vale St., West Rosobud
Telephone-(059) 862705

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David Crosby, Ken Walker, John Hallgarten.

--oo00oo--

DIARY CF COMING EVENTS

April 23-General Meeting, Spoker Ken Walker on Native Bees.
June 18-Annual General Meeting.

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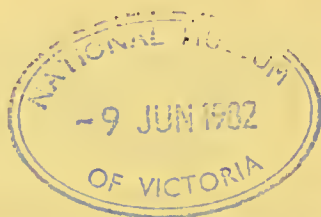
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VOL. 12 NO. 3



JUNE 1982

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA



THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist". The Society encourages corporate membership of schools and study groups, of libraries and of University and departmental staff.

OBJECTIVES

The aims of the Society are :

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 P.M. on the second last Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S)
Student, Associate.....	5.00 (Aust)	" 5.75 "

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

The meeting, chaired by P. Kelly, opened at 8.05pm. The President paid a special welcome to J.C. Le Souëf returning after a period of illness.

Apologies: I. Watkinson

Attendance: R. Besserdin, G., J. & C. Burns, P. Carwardine, R. Condron, D. Crosby, R. & J. Field, S. Greenstreet, D. & J. Holmes, D. Johnson, A. Kelly, J. & M. Le Souëf, G. & J. McColough, C. & C. McQueen, G. Milledge, T. New, W. Ruesink, S. Smith, C. Stahl, D., N. & B. Stewart, R. Vagi, K. Walker.

Minutes of the February meeting were passed (Carwardine/Stahl).

Correspondence: Received from the Entomological Society of Queensland, Australian Entomological Society, Entomological Section of the Royal Zoological Society of the New South Wales, Entomological Society of New Zealand, Clunies Ross House, CSIRO (Invitation to opening of the D.F. Waterhouse Laboratory). Accepted J. Le Souëf/G. Burns.

Treasurer's Report: R. Condron reported that there are at present 24 financial members. Current credit balances are \$386.51 (general account and \$270.50 (publications account). The audited balance sheet for 1981 was tabled for inspection. Accepted M. Le Souëf/Carwardine.

Editor's Report: The president announced that K. Walker has agreed to take over the position of editor, as 'Zoo' Le Souëf has expressed a wish to relinquish this post. A vote of thanks to 'Zoo' for his dedicated work (Crosby/Carwardine) was carried by acclamation.

Future Programme: The secretary outlined recommendations from the last Council meeting as follows:

- (1) That, from the beginning of 1983, meeting dates should be designated as 'the third Friday' of even months, not as 'the second last Friday'. (Carwardine/J. Field) Carried, after brief discussion.
- (2) That a meeting (possibly an additional meeting) should be allocated later this year for an instruction session in 'Basic Insect Structure'. August has been tentatively accepted for this, and T. New will conduct the meeting.

Exhibits and Notes:

- (1) K. Walker - brochures indicating the programme of the National Museum of Victoria for Museums Week. (Distributed)
- (2) T. New - poster advertising the Symposium 'Australian Systematic Entomology: A Bicentennial Perspective.'
- (3) D. Johnson - a mud-wasp's nest
- (4) P. Kelly - recorded seeing 'swarms' of ants flying over tree tops. Discussion on the opportunistic nature of bird predators on such swarms ensued.

The President then introduced the speaker, K. Walker (Dept. Entomology N.M.V.), who gave a general talk on classification and biology of native bees, illustrated by many slides of the systematic features and biological characteristics. In thanking the speaker, P. Kelly commented on the excellent quality of these slides and on the very informative nature of the talk.

The meeting closed at 9.35pm.

HONORARY TREASURER'S REPORT

State ment of receipts and expenditure year ended 31st Dec. 1982

RECEIPTS

	\$
Credit Balance brought f/ward	1014.41
Bank Interest General A/C	38.13
Subscriptions	605.50
Ex. Subs Journal Sales	26.00
Advertising	60.00

	1744.04

Publications Equip. Fund Inc. Interest	270.50

Total	2014.54

EXPENDITURE

Journal Production:	
Photocopying, Stationery	183.80
Postage	74.38
Projector use	10.00
Typewriter repairs	32.50
Telephone (ed.)	2.00
Clock presentation	31.00
Coffee	2.62
12 month term deposit	1000.00
Credit balance general A/C	407.74

	1744.04

Publications Equip. Fund Inc. Interest	270.50

Total	2014.54

EDITORIAL COMMENT

As the incoming editor, I would like to take this opportunity on behalf of the Society to sincerely express our thanks to my predecessor, 'Zoo' Le Souëf and his wife Mary, for all the work they have put into the publication of this journal. They both have and will continue to inject enthusiasm into the society through their support and actions.

A new editor always initially acts like a new broom and I have made some (I hope not too radical) alterations to the journal. Feedback from the members will be much appreciated as after all it is YOUR journal. Praiseworthy comments will be gratefully accepted, constructive criticism noted and others will be used appropriately. The journal can only remain viable while there are articles to fill it so I hope you will give me the support you have shown 'Zoo'.

Ken Walker

WORLD WILDLIFE FUND BEETLE PROJECT

by D.F. Crosby

The World Wildlife Fund has a division in Australia which obtains funds by donations and uses them in conservation projects supervised by leading scientists and conservationists. These projects are both within Australia and as part of world-wide schemes firstly aimed at undertaking comprehensive surveys of endangered species of plants and animals and then initiating appropriate conservation measures, often with Government backing.

The Newsletter No. 10 (Summer 1982) of the Australian Division mentions a new project recently added to the list of those awaiting an allocation of funds, and, as this relates to insects, I thought members of the Society could be interested to hear of it. The following is a copy of the note published in the Newsletter:

PROJECT 46: 'A SURVEY OF BUPRESTID BEETLES IN WESTERN AUSTRALIA

Buprestids have been collected by amateur entomologists since the first European settlement because of their beauty which led to their being named jewel beetles. Yet little is known about the life history of most species.

All species of jewel beetles are now gazetted in Western Australia as endangered fauna.

However, no finance has ever been made available in Australia to undertake studies aimed at conserving native beetles and without basic information, effective conservation measures cannot be undertaken.

This project - which will cost \$30,782 - aims to identify the jewel beetle species in the Norseman - Balladonia districts of W.A. Also, valuable information will be gathered for data on areas of land which should be conserved because of the diversity of species.

To gain an understanding of the bees one must take a look at the ancestral stock from which they arose. The primitive hymenoptera probably resembles our modern day sawflies which feed on plant material, have caterpillar like larvae, defecate throughout their entire larval life, do not have a constricted waspy waist and have a sawlike or piercing ovipositor for placing their eggs in the plant tissue. This group of hymenoptera is known as the Symphyta (Fig. 1).

From these insects arose the parasitic groups of wasps such as the Ichneumonids, Chalcids and Proctotrupids (Fig. 1). This group, the Parasitica, transferred their larval host preferences from plant tissue to becoming mainly internal parasites of insects. Since the larvae of this group live inside their hosts, they are much modified in comparison to the Symphyta with regards to the reduction of their sensory organs. They have lost their eyes, almost lost their antennae, do not possess legs and have no pigmentation or hardening of the outer cuticle. As the larva needs to feed on its host throughout its entire larval cycle it would be disastrous if the host were to die prematurely and this would happen if the larva were to be continually expelling its toxic waste products into its host. They have got around this problem simply by not being able to defecate as the midget does not join with the hind gut until larval development is complete. After this it does not matter if the host dies quickly. The adults of these wasps needed to be able to insert their eggs deep inside the tissue of their hosts and therefore developed a very flexible abdomen and a constricted waist which acts as a pivot point to be able to insert the ovipositor at about 90° to the host tissue. This wispy waist is what most of us associate with the wasps, bees and ants.

The Aculeata (Fig. 1) was the next evolutionary step of the wasps and here the ovipositor has lost its egg laying function and now serves only as a sting for defense or to paralyse their hosts. They do not lay their eggs inside the host but rather on the outside and the larvae burrow in. Some of these wasps, the Vespids and Sphecids, have abandoned the parasitic mode and provide their larvae with chewed insect tissue.

Most of these wasps visit flowers to obtain carbohydrates from the nectar and since the flowers contain a rich source of protein, pollen, somehow certain wasps changed to using pollen as a larval food source. This has occurred twice in the Aculeata, in the Vespids a small group of wasps called the Masarids and with the Apoidea - the bees. Although there is no direct proof, the evidence points to the bees arising from an ancestral Sphecids source of which there are no modern day representatives.

The bees depend entirely on flowers for food so could not have arisen before the appearance of the flowering plants, the Angiosperms, and these were the dominant vegetation in the middle Cretaceous period about 100 million years ago. Unfortunately there are no bee fossils from this time and the first known bee fossil is from the Eocene period, about 50 million years ago, by which time the bees had already specialised.

The phylogenetic development of the bees can be associated with the development of the flowering plants. The primitive flowering plants exposed their nectar in a broad shallow cup that is readily available to wasps and bees with a short tongue. Australia has a very unique primitive plant flora which is represented in the plant family Myrtaceae and includes plants such as

Eucalypts, Angophora, Melaleuca, Eugenia, Tristania, Callistemon and Leptospermum. In conjunction with this primitive plant flora Australia has developed a very unique primitive bee fauna especially in the family Colletidae (Fig. 2) of which the Stenotritinae and Euryglossinae are found only in Australia.

The initial radiation of the bees were adapted to obtain food from broad shallow cups and have a tongue similar to that found in wasps. It is short, blunt and usually bilobed. (Fig. 3). The first five families of the bees, the Colletidae, Halictidae, Oxaeidae, Andrenidae and Melittidae (Fig. 2) are usually referred to as the "Short-Tongued Bees".

The Halictids glossa (tongue) characteristically is pointed or like a dagger which gives them a slight advantage over those with a blunt tongue. To exemplify this comment, a group of Colletids the Euryglossines which number at least 300 species have been recorded feeding on only 4 plant families whereas a group of Halictids the Homalictus numbering about 50 species have been recorded from at least 21 different plant families.

Plants with deep tubular flowers probably arose in coevolution with their pollinators and this gave rise to a second radiation within the bees that were adapted to making use of this type of flower. This required the lengthening of certain mouthparts and a change in the function of the mouthparts. The short tongue bee families lap the nectar from the flowers whereas the long tongue bees formed a sucking tube with their mouthparts to draw the nectar up (Fig. 4). The top four families, the Megachilidae, Fideliidae, Anthophoridae and Apidae are referred to as the "Long-Tongued Bees".

The bees arose from the sphecoid wasps and in doing so changed their larval protein source from insect tissue to pollen. This involved both structural and behavioural modifications to enable the collecting and transporting of pollen from the flower to their egg chambers.

Pollen transport is made possible by the possession of species pollen carrying hairs aggregated on specific parts of the body. There are two forms of pollen carrying hairs: (a) Plumose hair (Fig. 5a) in which there is a central hair shaft along which lateral branches occur; (b) Branched hair (Fig. 5b) in which the central shaft itself divides into many branches. These two types of hairs hold pollen by different actions. The plumose hairs clump together and form a mat covering on the outer surface of the pollen load giving it external stability whereas the branched hairs spread throughout the pollen mass giving it internal stability. Plumose hairs have their greatest use on sites that present a large surface area on which to place the pollen, e.g. the underneath of the abdomen. The branched hairs are more efficiently used on sites that have a small surface area for pollen collection e.g. the femur of the hind leg; here they are able to flange out from the leg on either side to accommodate additional pollen without increasing the distance the pollen is from the leg. The further the pollen mass gets from the body the greater are its chances of being dislodged.

Within the bees there are two groups which do not carry pollen on the exterior of their bodies but rather in a section of the foregut, called the crop. Both these groups are in the Colletids, the Euryglossines which are found only in Australia and the Hylaeines which are mainly centered in Australia. These bees gather pollen by either directly eating it or collect pollen on their forelegs which are then groomed over a specialised comb on the inside of the mouthparts (Fig. 6). This comb is present only in the primitive bees of the Colletidae and is either non-functional or lost in all other families.

Pollen carrying areas of bees are always situated on the posterior underneath sections of the body - the hind legs and the abdomen. The pollen is collected on all parts of the body and through grooming manoeuvres is transferred to the pollen carrying areas. Each group of bees have their own primary pollen carrying area and sometimes there are secondary and tertiary areas. These primary pollen carrying areas are often characteristic of the family or in some cases more specific to only the genus. The following table lists examples of the pollen carrying areas of the Australian bees.

Family	Primary	Secondary	Tertiary
Colletidae			
<u>Euryglossines</u>	Crop	-	-
<u>Leioproctus</u>	Tibiae	Femora	-
Halictidae			
<u>Homalictus</u>	Abdomen	Femora	Tibiae
<u>LasioGLOSSUM</u>	Femora	Abdomen	Tibiae
Melittidae			
<u>Ctenolectra</u>	Tibiae	Basitarsi	-
Megachilidae	Abdomen	-	-
Anthophoridae	Basitarsi	Tibiae	Femora

The Apidae (honeybees) were excluded from the table as they differ from all other families of bees in their structural modifications for pollen transport. The pollen carrying areas described so far are the result of aggregations of specially modified hairs and these areas of pollen transport are called scopae. The Apidae do not have aggregations of specialised hairs rather their pollen carrying area is concave, completely bare, positioned on the outer surface of the hind tibiae and is called a corbicula. Bees with scopae place the pollen directly into these areas amongst the special hairs, whereas bees with a hairless corbicula force the pollen into these areas by drawing their pollen covered mid-legs over a comb at the apex of the corbicula which squeezes the pollen up into the corbicula. As can be seen this is a totally different method used by the Apidae as compared to the rest of the bees but as I'm sure we have all seen the the pollen covered legs of honeybees, it is obviously a very efficient collection method.

A number of bees are parasites on the pollen collections of other bees and what they are in fact doing is stealing another bees larval protein source. This form of parasitism is called Cleptoparasitism. The cleptoparasitic bees enter the nest of the victim and search until they find a brood cell that has been provisioned with a pollen ball. The adult female then lays her own egg on this pollen ball and either kills the victim bee's larva or the parasitic larva kills it. The larva then proceeds through the normal developmental stages and emerges from the nest without the true owner of the nest being any the wiser as to what has gone on. The adults of these parasitic bees completely lack scopae and occur in the two long-tongue bee families of Anthophoridae and Megachilidae.

The biology and nesting behaviours of the bees is fascinating and much an understudied aspect. The Apidae in which is found the classic well known case of a hive with one queen and worker, nurse and guard bees are the only examples of true communal eusocial behaviour. Here exists division of labour and distinctly defined roles within the community. The remainder of the bees show a range of sociability varying from solitary (in which a small hole is dug in the ground, a pollen ball placed within, an egg laid on top

and the cell sealed and left alone) through to varying degrees of sociality (in which several or many females share the same nest and help each other with digging of the tunnels, but even here all females lay their own eggs and provision their own cells with pollen.

To obtain the complete story of species and their biology of the native Australian bee fauna will require many lifetimes work. The scope is enormous but the tasks rewarding due to the very unique bee fauna Australia contains. The present standing of our knowledge taxonomically has been the result of broad spectrum collecting techniques which have given us an overall appraisal of the diversity of the fauna but as of yet only a few groups have been dealt with in any great detail. Biology wise our knowledge is very poor and unlike our relatively quick broad spectrum collecting techniques employed to the taxonomical side of the fauna, biology data can only be gained from continued observations, excavations of nests and possibly setting up of colonies in laboratory situations to understand some of the intricate day to day activities in the life of a bee. It is indeed a very absorbing study and one well worth the effort expended.

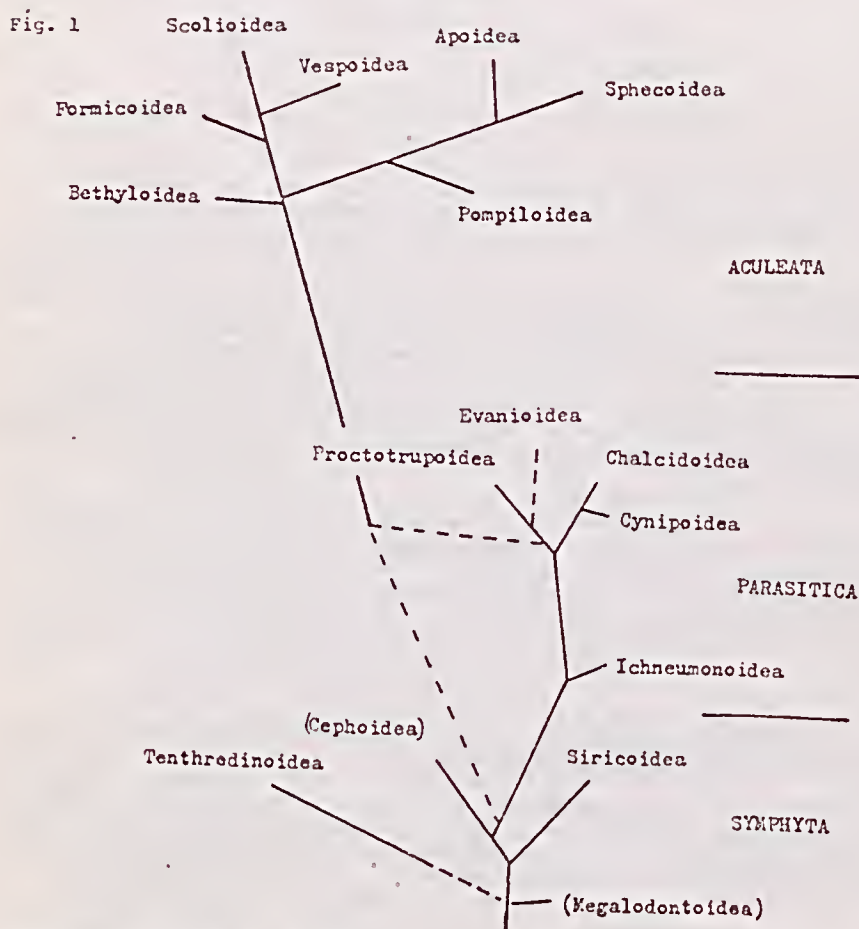


Fig. 2

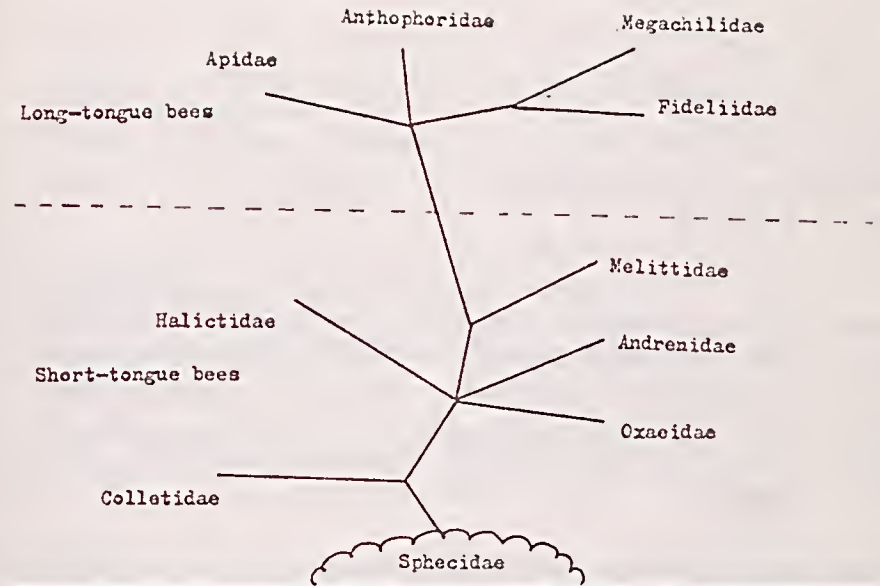


Fig. 3



Fig. 4



CARDIO

STIPES

LABIAL PALPUS

GLOSSA

MAXILLARY PALPUS

GALEA

Fig. 5 A



B



Fig. 6



13th Annual General Meeting and Conference of the Australian Entomological Society

The annual meeting and conference were held this year at the Australian National University, Canberra which is within walking distance of the CSIRO Division of Entomology. The dates of the meeting and conference coincided with the official opening of the new D.F. Waterhouse Laboratory of Insect Taxonomy which was presided over by the Hon. David Thomson, Minister for Science and Technology.

The conference was attended by 216 delegates representing entomological interests throughout Australia. A number of invited overseas entomologists attended and gave talks on their special interests or entomology in general. Some of these included Prof. G. Bush (USA: Genetics), Dr E. Hardy (Hawaii: Drosophila speciation), Prof. C.D. Michener (USA: Bees), Dr L.A. Mound (UK: Thrips) and a delegation from the Biological Control Mission from the People's Republic of China.

The first day's lectures consisted of a symposium entitled "Australian Systematic Entomology: A Bicentenary Perspective" and was delivered by seven speakers. The proceedings of this symposium are to be published and will make interesting reading for anyone with entomological interests. During the remaining two days 55 papers on many aspects of entomological research currently underway, were delivered and these included such topics as genetics, chemical control, biological control, physiology, biochemistry and systematics. These papers will not be published in full; however, abstracts of their contents are available.

Apart from the value in attending the organised talks much is gained at these conferences during the 'after hours' social meets. Many old friendships are rekindled and many new ones made. The conference was an outstanding success and much credit must be given to the staff of CSIRO who worked very hard to make it all look easy. The site for the 1983 conference will be Armidale, New South Wales.



Minutes of Council Meeting held at Clunies Ross House
21 May 1982

Chaired by P. Kelly

Apologies: D. Crosby, D. Johnson, T. New, 'Z' & M. Le Souëf

Present: P. Kelly, D. Stewart, G. & J. Burns, P. Carwardine, K. Walker.

Minutes of the last Council meeting (12th March, 1982) were confirmed:
D. Stewart/G. Burns.

Correspondence: Accepted. P. Kelly/K. Walker

Treasurers Report: Deferred.

Editors Report: Discussed slight changes in format of journal.

General Business:

1. Nominations received for 1982 Office Bearers

Position	Nominee	Nominated Seconded
President	P. Kelly	D. Stewart K. Walker
Vice Presidents	P. Carwardine	J. Burns P. Kelly
	G. Burns	K. Walker J. Burns
Secretary	T. New	P. Carwardine G. Burns
Treasurer	R. Condon	K. Walker J. Burns
Editor	K. Walker	P. Kelly D. Stewart
Excursion Secretary	P. Carwardine	G. Burns K. Walker
Councillors	J. Burns	P. Kelly P. Carwardine
	G. Burns	K. Walker D. Stewart
	J. Le Souëf	P. Carwardine K. Walker
	M. Le Souëf	J. Burns P. Kelly
	D. Johnson	D. Stewart G. Burns
	D. Crosby	K. Walker P. Kelly

R. Field

T. New by proxy

K. Walker

G. Burns

A. Yen

K. Walker

D. Stewart

These are the nominations received and although the constitution states that all nominations must be received seven days prior to the Annual General Meeting, nominations on the night will be accepted.

2. Programming for the rest of 1982 to be submitted to the incoming council was as follows:

June: Annual General Meeting

August: either a talk by Ross Field or a Film Night

October: Talk by Tim New

December: Members night

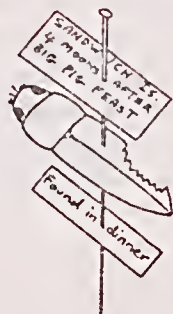
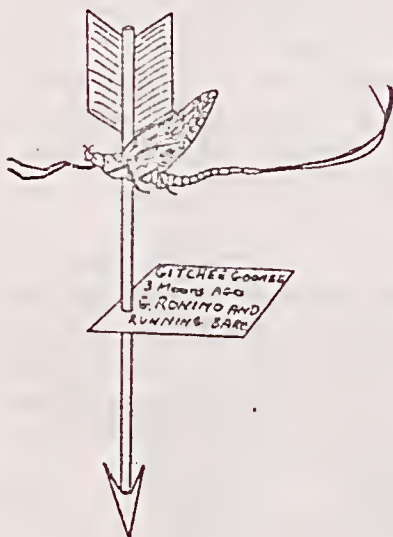
3. Discussion of events at recent Australian Entomological Society Annual General Meeting at which Tim New represented the Society and acted as proxy for Peter Kelly. Mentioned was the possible introduction of page charges for papers submitted to J. Aust. ent. Soc.

4. Discussion of - attracting more junior and professional members to the society.

- publishing of a society journal on an irregular basis. Problems with obtaining articles, referees and cost of production.
- possibility of a winter indoor excursion.

The meeting closed at 9.10 pm.

Some Strange Pinning Methods - by G. Monteith, A. Postle & D. Hancock.



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OFFICE BEARERS 1981/1982

President - Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659
Telephone - (057) 938230.

Vice-Presidents

Peter Carwardine, 2a Victoria Rd. Melvern.
Telephone - 2118958
Gordon Burns, 3 Inglis St., Mornington
Telephone - (059) 753730

Hon. Secretary

Dr Tim New, Zoology Dept., LaTrobe Uni., Bundoora
Telephone 7181007, (home) 4792247 (uni.)

Hon. Treasurer

R. Condon, 96 Shannon St., Box Hill Nth.,
Telephone 826300

Hon. Editor

K.L. Walker, National Museum of Victoria
71 Victoria Crescent, Abbotsford 3067
Telephone - 4195200 (NMV), 4812043 (home)

Excursion Secretary

Peter Carwardine, 2a Victoria Rd., Malvern, 3144
Telephone - 2118958 (home), 5090622 (office hours)

Immediate Past President

David Stewart, 15 Vale St., West Rosebud
Telephone - (059) 862705

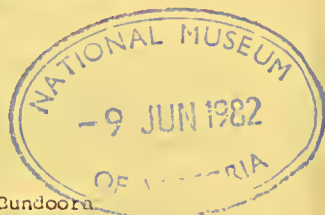
Councillors

Mesdames Joy Burns, Mary Le Souef, Dorothy Johnson, Messrs
David Crosby, Ken Walker, John Hallgarten.

DIARY OF COMING EVENTS

June 18th - Annual General Meeting
July 23rd - Council meeting
August 20th - General meeting, Speaker not yet confirmed
Sept. 17th - Council meeting

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Ento
P595-705
V645

VOL. 12 NO. 4



AUGUST 1982

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist". The Society encourages corporate membership of schools and study groups, of libraries and of University and departmental staff.

OBJECTIVES

The aims of the Society are :

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 P.M. on the second last Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S)
Student, Associate.....	5.00 (Aust)	" 5.75 "

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE ANNUAL GENERAL MEETING, 18 JUNE, 1982

The President, P. Kelly chaired the meeting which opened at 8.10pm.

Apologies: D. Crosby, J. & R. Field, D. & J. Holmes, D. Johnson, M. & J. Le Souëf, I. Watkinson, P. Williams.

Attendance: G. & J. Burns, P. Carwardine, R. Condron, L. & K. Dunn, M. Hunting, S. Johnson, P. Kelly, G. Milledge, T. New, D. & N. Stewart, R. Vagi, K. Walker, A. Yen.

Minutes of the previous AGM passed (D. Stewart/G. Burns)

Correspondence: Received from Australian Entomological Society, Entomological Societies of New Zealand and Queensland, Royal Zoological Society of New South Wales, CSIRO, Clunies Ross Foundation, Australian Conservation Foundation. Accepted Condron/J. Burns.

Treasurer's Report: R. Condron reported a credit balance of \$616.66 (current account) and \$270.50 (publications account). There are 43 financial members. The balance sheet published in Vic. Ent. 12: 24 is for 1981 not 1982 as printed. Accepted Carwardine/J. Burns.

Editor's Report: K. Walker commented on the need for more contributions to the Journal and on some recent problems of adequate standard maintenance in reproduction of the Journal. P. Kelly expressed appreciation to the Editor for his having taken over production of the Victorian Entomologist.

Excursions: P. Carwardine commented briefly on the two excursions held during the last year, to Inglewood and Mt. Disappointment. Discussion over possible areas for following trips ensued, and the Kinglake and Mt. Piper areas were noted.

General Business:

- (1) K. Dunn exhibited a drawer of Satyrinae, including series of Oreixenica and Tisiphone from various localities.
- (2) P. Carwardine commented on substantial cockchafer activity recently observed near Colac.
- (3) R. Condron remarked on the abundance of insects seen on a trip to Queensland in January.
- (4) G. Burns drew members' attention to the publication of Part II of 'Beetles of South Australia' by E.G. Matthews.

The President, after thanking the council and membership for their support during the year, stepped down from the chair. Mr L. Dunn, acting as Returning Officer, expressed the Society's appreciation to P. Kelly for his work as President (supported by acclamation) and conducted the election of new office bearers. Results of these elections are as follows: (all positions were uncontested and unanimously approved).

President: P. Kelly

Vice-Presidents: P. Carwardine, G. Burns

Secretary: T. New

Treasurer: R. Condron

Editor: K. Walker

Excursion Secretary: P. Carwardine

Councillors: J. Burns, K. Dunn, M. & J. Le Souëf, D. Johnson, D. Crosby, R. Field, A. Yen.

The President then gave his address: 'Illustrations of Beetles' and was thanked by K. Walker.

The Meeting closed at 9.40pm.

MINUTES OF THE COUNCIL MEETING, 23 JULY 1982

The President, P. Kelly, chaired the meeting which opened at 8pm, welcomed new members of the Council, and announced the recent passing of Mr J.C. Le Souëf.

Apologies: J. Burns, R. Field, M. Le Souëf

Present: P. Kelly, D. Stewart, G. Burns, P. Carwardine, D. Crosby, T. New, K. Dunn, A. Yen, K. Walker

Minutes of the previous Council meeting were passed. (D. Stewart/ K. Walker)

Treasurer's Report: Deferred

Editor's Report: K. Walker reported that transferral of production of the 'Victorian Entomologist' to the National Museum had proceeded smoothly. The new cover design, by G. Milledge, was generally applauded, although a member had expressed concern that the insect depicted was not 'truly Australian'. Contributions for inclusion in the forthcoming issues would be welcome, including small news items for 'on the grapevine'.

General Business:

- (i) Council was unanimous that the Society should establish a memorial in honour of Zoo Le Souëf and considerable discussion was held as to the form this might take. A donation of \$100 has been received from a founder member of the Society, and is to be used as the nucleus of a memorial fund. Council also approved a donation to be sent to the National Heart Foundation as a token of respect to Zoo.
- (ii) D. Crosby suggested that a new ENTRECS Co-ordinator, if found should be co-opted onto Council. Approved unanimously.
- (iii) Discussion was held on possible topics for future meetings. Amongst subjects suggested were forest entomology, work of the Biological Survey Department of the National Museum, Galls, Insect Genetics, and possible further instruction sessions, in addition to the usual members nights. Several possible speakers were noted.
- (iv) Following referral from the last Council, discussion was held on format of the Victorian Entomologist. It was agreed that the present format and frequency of issue should be maintained, and that efforts should be made to upgrade standard of content and production. Suggestions made included adoption of a printed cover, inclusion of more instructional articles, and features on particular insects.
- (v) Membership drive. Measures suggested to increase membership included distribution of issues of the Vic. Ent. to Naturalists Clubs and to High Schools, with a covering letter explaining the possible attractions of the society. K. Walker agreed to co-ordinate this.
- (vi) P. Carwardine raised the question of possible Excursion sites for the forthcoming season. Mt. Tallarook and nearby State Forest was recommended for late November/early December; Kinglake and the Brisbane Ranges were suggested as possible sites for later in the summer.

- (vii) A. Yen drew Council's attention to a forthcoming Museum display incorporating effects of forestry operations on invertebrates and would appreciate information from members on this topic.

The meeting closed at 9.45pm.

ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES

AMATEUR WORKSHOP

The Society will be conducting a weekend "workshop" for amateur entomologists and collectors on the weekend of September 25th and 26th 1982 at Sydney University. Topics which we hope to cover in lectures or demonstrations will include:

- Insect photography
- Illustration
- Microscopes
- Microtechniques and dissection, including genitalia dissection
- Writing scientific papers and publication
- Collecting and preserving techniques
- Entomological literature and literature searching
- Rearing insects
- Plants and butterfly food plants
- Special research projects for amateurs
- Identification techniques and procedures, keys, use of collections and taxonomic literature

We hope to have demonstrations of collections, literature and equipment. A fee of about \$5.00 to \$10.00 will be charged to cover our expenses. Participants need not be members of the Society.

If you would like more information and a registration form please contact the address below immediately:

Harley Rose,
Department of Plant Path. & Agric.
Entomology,
Agriculture Faculty,
University of Sydney,
NSW 2000 Phone (business hours)
692 2528 or 692 2531

THE 2nd AUSTRALIAN TRICHOPTERA SYMPOSIUM

The 2nd Australian Trichopterist's Conference will be held on the weekend of the 4th-5th of December 1982 at the Mt Buffalo Chalet. Topics for discussion will include the Systematics of Adult and Larval Trichoptera in Australia with reference to the World Fauna, Biological Studies of the various groups and discussion of the problems encountered with research in this group of insects.

There will be a Registration Fee of \$5.00 plus accomodation and meal expenses for the weekend.

For further details and registration forms please contact:

Mr J. Dean,
MMBW Laboratories,
Box 4342 GPO MELBOURNE

A COLLECTING TRIP TO TATHRA

by S.S. Johnson
Lot 18, Main Drain Rd., Bunyip, Vic. 3815

In May 1981, my family and I went on a collecting trip to Tathra, located on the south western coast line of New South Wales, near Bega. It proved to be a very interesting trip as a greater diversity of butterfly species were taken than had been expected, especially for that time of the year.

We stayed in a pleasant caravan park bordering a well vegetated natural bush area, which included many various species of butterfly food-plants. Amongst these was the foodplant of the swordgrass Tisiphone abeona abeona (Donovan) which I would have liked to add to my collection of browns. Another was the Oleander, foodplant of Euploea core corinna (W.S. Macleay) (The Australian Crow); however, due to the size of the trees and my inexperience with recognition of the pupal stage (despite helpful advice from Kelvyn Dunn), I was not very successful.

Initially, the only species of butterfly that could be seen flying was the dreaded Cabbage White (Pieris rapae rapae (Linn.)) which was very disappointing and did not tempt me in the least. Walking around the town with net in hand is not my idea of a joke, although it seemed to amuse everyone else. The only mistletoe in the town was next to a milkbar, but I was keen and went over to investigate.

Further searching of citrus fruit trees paid off well as there were many people who regarded the well known Orchard Swallowtail (Papilio aegaeus Donovan) as a common pest and welcomed me into their yards to search the trees. After only an hour I had taken six differently coloured P. aegaeus pupae. The colour of these pupae was suprisingly adaptive to match that of the leaves and made them very difficult to find.

I gave up searching after about three hours but was pleased with the seven pupae I had collected. On the way back, I ventured into a vacant lot thick with couch grass and waving the net across areas of the grass caused a few skippers to dart off in all directions. I pursued and caught two males which I believe to be White Grassdarts, Taractrocera papyria papyria Boisduval.

The following day was hot and dad drove me into a national park at Tathra. It aroused my suspicion that all the good species of Lepidoptera fly in national parks for safety. I had not seen one Ogyris spp. flying elsewhere, but there were many on the wing that day in the park. I noticed a few Ogyris abrota Westwood (The Dark Purple Azure) females flying extremely low around clumps of mistletoe, but I was not even tempted to get out my net, although some may believe this reluctance was due to the presence of the park ranger doing his rounds. We drove back out to Tathra and stopped at some low mistletoe clumps about half way along the highway to Bega where I netted a small tattered female O. abrota, but as it was badly damaged I let her go.

The next day we packed up and came home to Victoria. Along the way we stopped at Eden, still in New South Wales, and I collected one fresh P. aegaeus pupa. When we got into Victoria it was pouring rain and this finished my homeward bound collecting. We arrived home at around 3.00 pm and I stored all my specimens and pupae in my bedroom where they could be closely observed.

Out of the eight P. aegaeus pupae bought back, only a disappointing two emerged. Five of them died, one was parasitised and of the two males that emerged, one was badly deformed. I hope to enlarge my collection by at least 100 specimens when I go to Queensland at Christmas this year and hope you have enjoyed my first article to the journal.

A BRIEF HISTORY OF THE PAROPSINES (COLEOPTERA: CHRYSOMELIDAE)

by Peter G. Kelly

The first Paropsines were collected by the Cook expeditions, at least one on the first expedition (1770) along the east coast of Australia and another on the third expedition (1777) in Tasmania. These and other species were described by Fabricius in publications from 1775 to 1801, mainly in the Genus Chrysomela.

In 1807, Olivier erected the Genus Paropsis, describing eleven new species and including four Fabrician species. The name "Paropsis" is a Greek word meaning a little bowl, indicating the hemispherical shape of these beetles. In 1808, Thomas Marsham erected the Genus Notoclea with twenty species, some of which were the same as those of Olivier, the remainder new. In due time this duplication was noticed and the name, Notoclea, was dropped in favour of Paropsis.

With the increasing settlement and exploration of Australia large numbers of species were being sent back to Europe for description. Over the next 100 years, the following workers described new species of Paropsis.

J.B. Boisduval	(1835)	13	species	
E. Newman	(1842)	10	"	from Port Phillip
W.F. Erichson	(1852)	12	"	from Tasmania
E.F. Germar	(1848)	10	"	
C.H. Boheman	(1858)	6	"	
C. Stal	(1860)	13	"	
J.S. Baly	(1864)	12	"	from Adelaide
H. Clark	(1864-5)	18	"	from W.A.
F. Chapuis	(1877)	147	"	
T. Blackburn	(1890-1901)	165	"	
J. Weise	(1901-1923)	30	"	

Masters Catalogue of Australian Coleoptera of 1887 lists 271 species and the 1916 edition of Coleopterum Catalogus lists over 400 species of Paropsines.

With this vastly increased number of species in one genus, the inadequate descriptions of the earlier workers, the scattering of the type specimens and the close similarity of many species, particularly after the almost complete fading of colour, the difficulty of making accurate identification is enormous. Several attempts to arrange this genus into more manageable groups have been made i.e. by Baly in 1864 and by Chapuis in 1877 but the most extensive revisions were those of Blackburn 1897-1901 and Weise 1901-1915.

Blackburn's monumental revision, published in six parts, in Proc. Lin. Soc., N.S.W., arranged Paropsis into five major groups and a number of sub-groups based on the form of the prothorax and the sculpture of the elytra and gave keys to all known species. Weise, on the other hand, in a series of papers from 1901 to 1915, split off a number of new genera (Paropsisterna, Chrysophtharta, Trachymela, Pyrrgo etc.) from Paropsis, based on other morphological features. The genera of Weise and the groups of Blackburn

roughly correspond. For example, Weise's much reduced genus Paropsis is almost identical to Blackburn's Group I.

Present day workers tend to use both of these systems and the Types, which are now largely collected together in the British Museum (Natural History), when attempting identifications. A complete revision of this group is long overdue and as many species are of some economic importance, good descriptions of adults and immature stages would be of great benefit. Some work has been done along these lines particularly by Cumpston in 1949 and de Little in 1980 but much remains yet to be done.

DELIAS ENNIA NIGIDIUS MISKIN -- ITS HOST PLANT AND SOME EARLY STAGES

by W.N.B. Quick

Black Mountain Rd., Kuranda, N. Queensland, 4872. Ph. (070) 937287

The abnormally dry, hot, and very humid summer and autumn in the Cairns area this year has dramatically reduced the number of butterflies to be seen on the wing, both in terms of species and individuals. While Papilio ulysses joesa Butler has been as abundant as ever, from August 1981 until March 3, 1982, not one single male of Ornithoptera priamus (Linn.) was observed in the environs of our house, where, without conscious effort, one might normally expect to see from five to ten daily, floating by. A mere half dozen or so females have been observed during the same period, although there appears to be some recovery imminent. A single specimen of both Pseudodipsas cephenes Hewitson and Hypochrysops protogenes miskini (Waterhouse) were taken in August last. The former species, in a normal season, is a reasonably frequent lunchtime visitor, the latter less frequent. Ironically, an unidentified female Anthea, very freshly emerged, appeared at the lights one wet evening. I have never seen Anthea in the immediate vicinity before, although I have reared both A. lycanoides godeffrovi (Semper) and A. seltuttus affinis (Waterhouse & Turner) from coastal areas.

With the butterfly fauna so depauperate, any tiny item tends to catch the eye. This was the case some ten days ago, as I was sitting on the verandah eating lunch. My eye was caught by some tiny object swinging on an invisible thread in the light breeze, some ten meters or so from my vantage point. Without much enthusiasm, I wandered down to examine the object more closely. Unquestionably, it was a Delias larva, smaller and more olive-yellow than that of D. mysis mysis (Fab.) which I had reared earlier from eggs on a Dendrophthoe sp. (? D. glabrescens). The larva reached the ground, and with the rapid 'gait' of a Pierid larva, headed directly to a nearby plant of Gahnia (?) sieberana.

Glancing upward to see just where it had descended from, I was surprised to find that it was not the Dendrophthoe, but Notothixox, one of the 'Golden' Mistletoes, now excluded (Clifford & Ludlow, 1972) from the Loranthaceae and placed in a sub-family Viscaceae, together with Viscum and Korsalthella. I had always regarded this plant as a nonentity from the point of view of being a host -- nothing seemed interested in it. I was even more surprised to see a further three larvae clustered on a single leaf. Anxious to photograph them (I had no idea of the species involved at this stage), I reached up and was about to pick the leaf, when all three instantly dropped by a thread to the ground, exactly as the first had done, but much more rapidly.

They were brought indoors preparatory to setting up the camera, but even before I was ready, had commenced the pre-pupa 'settle-down' and evacuation of the alimentary tract, and had changed visibly. Loath to disturb them at this critical stage, I let them pupate, and was content to photograph the pupa.

The latter turned out to be quite distinct from that of any species I knew, and did not fit any published description I could locate. The wait began, hoping desperately that parasites had not first found the larvae. I had not long to wait. In the very hot weather, they emerged some nine days later, ending speculation on their identity.

The ova, predictably, will be characteristically spindle-shaped, with strong vertical ribs and finer horizontal ridges, cream, laid in rather higgledy-piggledy groups on the underside of a leaf, and fastened by a super-abundance of secreted adhesive rather than careful placement. This latter characteristic, so typical of D. nigrina (Fab.), is at variance with the repeated, lengthy examination of the host plant prior to oviposition.

The larva, observed only in the latter stage of the final instar, had few characters which would distinguish it from that of some other Delias species - save perhaps for the olivaceous colour, long white bristles, and of course, the host-plant. Notothixos is not uncommon on the Kuranda Range, and the butterfly seasonally quite frequent. It seems quite extraordinary that the host plant and early stages have not, apparently, been previously recorded. An empty pupal shell of D. mysis was subsequently found on the underside of a leaf of Notothixos, but could have originated from a larva straying from the nearby Dendrophthoe.

Pupa: (Fig. 1) Bright yellow. A prominent, strongly bifid anterior process, pale yellow, with each spine curved outwards and upwards, sometimes tipped black. A secondary pair of short stout spines over the palpal area of the head. A pair of short, stout lateral thoracic spines. In some of these respects the pupa resembles that of D. harpalyce (Donovan) and D. nigrina, but from which it differs substantially in having only two pairs of abdominal spines, shining black, and curved slightly outwards and upwards. Thoracic ridge only moderately developed. Tip of cremaster black. A subdorsal series of whitish, spiracle-like dots is visible in most examples. The cuticle is extremely thin, and abdominal segments difficult to distinguish. Average length 25 mm. The pupa is apparently attached to the underside of plants and litter beneath the host-plant under normal conditions, and the silk girdle is relatively frail.

Editorial note: A subsequent paper describing in detail the ovum and larva of Delias ennia nigidius Miskin will appear in the October issue of the Journal.



Fig. 1. Pupa of Delias ennia nigidius Miskin.

BUTTERFLY SPECIES RECORDED FROM MOUNT CORAMBA, NEAR COFFS
HARBOUR, NEW SOUTH WALES

by Kelvyn Dunn¹ and Mark Hunting²

1. - 16 Grace Avenue, Dandenong, Vic. 3175

2. - 29 Paloma Street, South Oakleigh, Vic. 3167

INTRODUCTION

Mount Coramba is situated approximately twelve kilometers north-west of Coffs Harbour on the mid-north coast of New South Wales. It is the highest elevation in the Orara East State Forest, being approximately 590 metres above sea level. A virtually unbroken belt of natural vegetation extends from Mount Coramba to the Darrigo district in the south, and the Lower Bucca State Forest to the north, as a result of which, Mount Coramba attracts a diverse and concentrated population of insect fauna to its summit and adjacent slopes.

SPECIES COLLECTED

Ten visits were made to Mount Coramba by the authors (independently) between January 1978 and January 1982, resulting in the taking of the 32 species detailed in Table 1. All specimens are stored in the authors' collections.

OBSERVATIONS AND BIOLOGICAL NOTES

The upper slopes of Mount Coramba appeared to be well vegetated by extensive areas of open forest with a fringe of secondary rainforest regrowth bordering the perimeter of the cleared summit. It was interesting to observe Trapezites maheta praxedes (Plötz), Toxidia peron (Latreille) and Acrodipsas cuprea (Sands), which breed in open eucalypt forest, hill-topping with rainforest dwellers such as Euschemon rafflesia rafflesia (W.S. Macleay) Hasora khoda Swinhoe and Telicota anisodesma Lower.

The record of Signeta tymbophora (Meyrick & Lower) is of substantial importance. This very local species has not previously been recorded between Mount Warning, near the Queensland border, and Gosford, north of Sydney (Common and Waterhouse, 1981) - a distance of over 600 kilometers. The capture of this species at Mount Coramba in December 1981 represents a new intermediate locality. December is also an extension to the recorded flight period of S. tymbophora in New South Wales.

Hesperilla mastersi mastersi Waterhouse, another local hesperid, was observed to be on the wing from at least December to February at this locality.

Cressida cressida cressida (Fabricius) was found to be a rarity at Mount Coramba with only a single capture made during February 1980.

The altitude of Mount Coramba is such that specimens of Tisiphone abeona taken at the summit would be expected to belong to the subspecies regalis (Common and Waterhouse, 1981); however, adults taken closely resembled T. abeona morrissi Waterhouse from adjacent coastal localities and thus were smaller and considerably darker than specimens of T. a. regalis Waterhouse taken near the New England National park. There was no evidence to suggest that T. abeona was breeding on the actual summit of Mount Coramba and this further implies its subspecific status to be that of morrissi.

Species of the genera Ogyris and Hypochrysops were not observed on the hilltop. H. ignitus ignitus (Leach) however, was taken, at a lower altitude, near Brukner Park Floral Reserve, only six kilometers away.

Records from other collectors who have visited Mount Coramba will be welcomed by the authors.

TABLE 1 Species checklist from Mt Coramba

	18 Dec 81	31 Dec 81	1 Jan 82	3 Jan 82	4 Jan 82	6 Jan 79	15 Jan 78	17 Jan 78	18 Jan 78	24 Feb 80
HESPERIIDAE										
<i>Hasora khoda haslia</i> Swinhoe					X					
<i>Euchemon rafflesia rafflesia</i> (W.S. Macleay)										X
<i>Netrocoryne repanda repanda</i> C. & R. Felder	X	X	X							
<i>Trapezites maheta praxedes</i> (Plötz)			X							
<i>Dispar compacta</i> (Butler)										X
<i>Signeta tymbophora</i> (Meyrick & Lower)		X								
<i>Toxidia peron</i> (Latreille)	X	X								
<i>Hesperilla mastersi mastersi</i> Waterhouse	X						X	X		X
<i>Hesperilla ornata ornata</i> (Leach)									X	
<i>Telicota anisodesma</i> Lower		X		X	X	X			X	X
PAPILIONIDAE										
<i>Protographium leosthenes leosthenes</i> (Double day)	X	X	X					X		X
<i>Graphium macleayanum macleayanum</i> (Leach)	X					X				
<i>Graphium sarpedon choredon</i> (C. & R. Felder)	X									
<i>Cressida cressida cressida</i> (Fabricius)										X
PIERIDAE										
<i>Elodina parthia</i> (Hewitson)				X						
<i>Elodina angulipennis</i> (P.H. Lucas)				X						X
<i>Delias nigrina</i> (Fabricius)	X							X		
<i>Delias nysa nysa</i> (Fabricius)			X			X				
<i>Anaphaeis java teutonia</i> (Fabricius)			X							
<i>Appias paulina ega</i> (Boisduval)		X		X			X		X	
SATYRIDAE										
<i>Hypocysta metirius</i> Butler		X								
<i>Heteronympha merope meropa</i> (Fabricius)				X						
<i>Tisiphone abeona morrisi</i> Waterhouse	X			X				X		
LYCAENIDAE										
<i>Acrodipsas cuprea</i> (Sands)		X						X		
<i>Candalides margarita margarita</i> (Semper)							X			
<i>Candalides absimilis</i> (Felder)		X	X	X				X		X
<i>Candalides consimilis consimilis</i> Waterhouse	X	X	X	X			X	X		X
<i>Prosotas felderi</i> (Murray)		X		X			X		X	
<i>Erysichton lineata lineata</i> (Murray)			X	X					X	
<i>Theclinesstes miskini miskini</i> (T.P. Lucas)										X
<i>Lampides boeticus</i> (Linnaeus)			X							
<i>Zizina labradus</i> (Godart)										X

SOME NOTES ON THE EARLY STAGES OF THE SKIPPER

SABERA DOBBOE AUTOLEON (MISKIN)

(HESPERIIDAE: Hesperinae)

by W.N.B. Quick

Blackmountain Road, Kuranda, North Queensland, 4872

The following notes on the early stages of this skipper are presented only in as much as they differ substantially from previously published descriptions and observations (Common & Waterhouse 1972 et seq.). The writer has no cause to doubt the earlier documentation. It is possible that larval appearance and behaviour differ seasonally or under varying climatic conditions. Although it seems unlikely, it is not impossible that two superficially similar species are involved. The larval behaviour and method of pupation observed by the writer, and independently by D.P. Sands, further suggest a generic relationship to Memene Joicey & Talbot.

Ovum: Roughly hemispherical with numerous faint irregular vertical lines or ridges visible in the basal portion. Cream when freshly laid, becoming reddish. Diameter 1.3mm, relatively large with respect to the size of the adult insect. They are deposited openly, usually singly, on the upper surface of the larger leaves of the crown of Cordyline terminalis and on many of the Cordyline cultivars. Little care appears to be given to their placement, and contrasting sharply in colour with the dark foliage, they are readily visible from some meters distance. Occasionally eggs are laid on the under surface of a vertical leaf.

Larva: Early instars: Head black, body translucent grey-green with a prominent dark green dorsal line and pair of faint dorsolateral lines. Mature larva, head pale brown with a short, dark brown) (- shaped frontal mark. Mandibles prominent, blackish. Body light green, paler at extremities, with three narrow dark green dorsal lines. The larva is not covered with a waxy bloom.

The young larva notches the edge of a leaf, rolling the margin, usually on the terminal side of the notch, into a tubular shelter. The shelters of older larvae may be simply an extension of this first shelter, or more commonly are constructed on the basal side of the notch, or on another portion of the same leaf. The larger larvae feed from only one section of the leaf, and at maturity feeding is terminated by the larva cutting, with remarkable precision, diagonal slit at each end of the shelter to form flaps. One of these is then closed with silk, and the opposite end of the shelter lightly attached to the leaf with silk.

Leaving the shelter, the larva then makes a neat, sweeping cut, precisely matching the edge of the shelter, which then hangs from the leaf. Re-entering the shelter from the remaining open end, the larva then severs the silken attachment to the leaf, and falls to the ground in its puparium. I am indebted to D.P. Sands for details of subsequent behaviour, during which the larvae, grasping the puparium in its mandibles, drags the puparium into the shelter of forest litter or other object prior to re-entering the structure and fastening down the second flap.

Immediately after pupation, the cuticle of the pupa exudes a white waxy bloom or powder, which can be seen sealing any remaining cracks in the puparium. The pupa, beneath the white bloom, is light brown, almost cylindrical, and devoid of any prominent anterior projection on the operculum. In the specimens reared at Kuranda, the operculum was not fully detached on emergence.

REFERENCE

Common, I.F.B. & Waterhouse, D.F. (1972) - "Butterflies of Australia."
Angus and Robertson, Melbourne 498pp.

A DESERVED RETIREMENT OF A WELL KNOWN VICTORIAN ENTOMOLOGIST

August 11th marks the beginning of long service leave which leads to the retirement of Miss Elizabeth Matheson of the National Museum of Victoria, Entomology Department. This will complete a time span of some 34 years with the department during which her prowess as an Entomologist has been well recognised.

Elizabeth received no formal instruction in the discipline before coming to the department but through a genuine interest in insects has attained an immense knowledge of the Australian fauna, in particular, that of Victoria. Unlike most Entomologists, she chose no definite group of insects to concentrate her interests in and as a result has achieved a broad knowledge of the taxonomy, biology and distribution of most groups (down to the generic if not the specific levels) that would embarrass many Entomologists today.

Her initial years in the department involved her with many of the pioneer Entomologists of Australia, few of whom, like herself, had formal training in entomology but their enthusiasm for the subject overcame this deficiency. Some of her more long term associations with these people are easily recalled. Mr Alex N. Burns who was the Curator of the department for many years and whose main interests lay with Lepidoptera and Cicadas. Mr C. Oke, the Assistant Curator to Mr Burns, and whose work concentrated on Coleoptera. Mr F.E. Wilson, another Coleopterist who specialised in weevils. Mr Tarlton Rayment who did so much work on the taxonomy and biology of native Australian bees and Mr H.F. Clinton whose work centered around Mallophaga. Elizabeth was also involved in the early 1950's on a major expedition from the Denver Museum to western Victoria organised by a Dr A.M. Bailey. She did not restrict herself solely to entomological interests and assisted greatly the Arachnologists Mr L.S.G. Butler and Mr R. Dunn.

Officially, Elizabeth's involvement with the department is complete but she is returning as a volunteer to tackle the re-pinning and systematic re-organisation of our Onthophagus (Dung beetle) and Formicidae (Ants) collections. If she is willing, I am sure we can find many other groups that need this close attention and in doing so keep this wealth of knowledge in the department.

On behalf of the Society we wish Elizabeth a happy and fulfilling retirement.

Editor

THE PASSING OF A GREAT ENTOMOLOGIST

John Cecil Le Souëf, known to us all as "Zoo", passed away on June 21, 1982 at the Southern Peninsula Hospital, Rosebud, Victoria.

Born in a sleepout at the Melbourne Zoo, on November 5, 1905 young Le Souëf received the nick-name "Zoo" while at kinder. His father William and his grandfather had been directors of the Melbourne Zoological Gardens, while two uncles had directed the Sydney and Perth Zoological Gardens, respectively. It was therefore reasonable to expect that young Zoo would eventually become involved with wild life.

After schooling at Melbourne Grammar he became a jackaroo in the Riverina, and Queensland. This, no doubt, gave him an interest in the outback and an introduction to the world of insects and birds, a fascination which he pursued for the rest of his life. He met Mary, a trained nursing sister, and they married in 1941. Around that time they owned a small cordial factory at Kyabram and also made, by hand, crumpets and snowballs for sale. Then in 1953 they settled in Blairegowrie, where they bought the village store. It was at this time that I first met Zoo and it was his interest in Hepialid moths that brought us together. He learned that I lived at Red Hill and was soon on the phone to arrange a meet, thus began a long friendship during which I was able to glean many interesting facets from his enthusiastic mind.

Following family tradition of involvement in natural history, Zoo became an authority on Australian moths and butterflies and travelled around Australia many times. He is credited with having discovered Hesperilla crypsarogyra leSouëfi Tindale, a new subspecies on Mt William in the Gramians in 1953. With Dr Norman Tindale, Zoo and Mary carried Nick (then a baby) up the roughly hewn path to the summit of Mt William to collect this species. Then in 1970, Zoo discovered a new butterfly on one of his trips to the north, in the Darwin area. It was named Virachola smilis dalyensis Le Souëf & Tindale and was described by Zoo with the help of Dr Norman Tindale, his life long friend. His interest in Ogyris also took him to many outback parts of New South Wales and Queensland, where he collected pupae and larvae, then brought them home to breed out. His other interest was Agaristidae and he did some work on them. Overall he wrote approx. 90 papers and in his early days at Kyabram conducted radio talks on nature.

He has left a fine collection of Lepidoptera, Coleoptera and various insects, as well as a comprehensive library on Entomology and other interests. Zoo always had a broad outlook and was 'in to everything'. He became involved in many community activities and was made a Paul Harris Fellow, one of Rotary's highest honours. He was also an honorary Justice of the Peace, and served on the Sorrento Court Bench.

One of his greatest involvements was to re-establish the Victorian Entomological Society in 1961, after a lapse of 20 years. This has prospered ever since and is now one of Australia's keenest clubs. In 1960 Zoo commenced the well known Rosebud Aquarium which is now run by his son Nick.

Zoo is survived by his wife Mary, his son Nick and his wife Anne, and grandchildren Atheca, Jonas and Domenic.

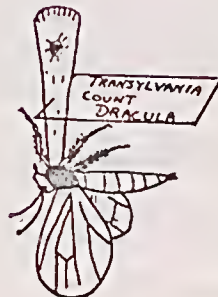
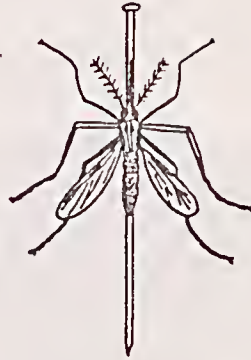
Zoo's passing is a sad loss to each of us who knew him, but the spirit of his motivation will live on within us.

We are the better because he passed our way.

David R. Holmes

SOME STRANGE PINNING METHODS

by G. Monteith, A. Postle & D. Hancock



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OFFICE BEARERS 1982/1983

President - Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659
Telephone - (057) 938230.

Vice-Presidents

Peter Carwardine, 2a Victoria Rd. Malvern
Telephone - 2118958
Gordon Burns, 3 Inglis St., Mornington
Telephone - (059) 753730

Hon. Secretary

Dr Tim New, Zoology Dept., LaTrobe Uni., Bundoora
Telephone 7181007, (home) 4792247 (uni.)

Hon. Treasurer

R. Condon, 96 Shannon St., Box Hill Nth.,
Telephone 886300

Hon. Editor

K.L. Walker, National Museum of Victoria
71 Victoria Crescent, Abbotsford 3067
Telephone - 4195200 (NMV), 4812043 (home)

Excursion Secretary

Peter Carwardine, 2a Victoria Rd., Malvern, 3144
Telephone - 2118958 (home), 5090622 (office hours)

Past President

David Stewart, 3 Vale St., West Rosebud
Telephone - (059) 862705

Councillors

Mesdames Joy Burns, Mary Le Souef, Dorothy Johnson, Messrs
David Crosby, R. Field, A. Yen, K. Dunn.

DIARY OF COMING EVENTS

August 20th - Instruction on Basic External Morphology of
Insects by Dr Tim New
Sept. 17th - Council Meeting
October 22nd - General Meeting - Speaker not yet confirmed
Nov. 19th - Council Meeting
Dec. 10th - Member's Night & Christmas Breakup

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VOL. 12 NO. 5



OCTOBER 1982

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

MINUTES OF THE GENERAL MEETING, 20 AUGUST 1982

The President, Mr P. Kelly, chaired the meeting which opened at 8.10pm.

Apologies: R. Condon

Attendance: G. & J. Burns, P. Carwardine, D. Crosby, K. & L. Dunn,
R. & J. Field, D. & J. Holmes, M. Hunting, M. Le Souëf,
T. New, C. Stahl, D. & N. Stewart, K. Walker, A. Yen.

Members stood for a minute of silence, in memory of 'Zoo' Le Souëf.

The President informed members that plans for a memorial were under consideration by Council.

Minutes of the April general meeting were confirmed (K. Walker/D. Stewart)

Correspondence: Received. (R. Field/K. Dunn)

Treasurer's Report: The Secretary reported that there were at present
48 financial members. Current credit account credit
is \$789.83.

Editor's Report: K. Walker expressed considerable concern over the
quality of duplication/collation in the latest issue
of the Victorian Entomologist. These were due to
final production stages outside his control, and a
letter has been sent requesting an explanation.
Members agreed that possible alternative methods for
production of the Victorian Entomologist should be
explored.

Excursions: P. Carwardine informed members that the likely first
excursion for the coming season would be to the Tallarook
State Forest on the last Sunday in November.

General Business:

- (1) Comments on ways to increase membership and on the programme
for the coming year were made by the President.
- (2) M. Le Souëf conveyed greetings to the Society from R. & N.
Manskie.
- (3) D. Holmes suggested that, in view of the unusually dry recent
weather, watch should be kept for unusual records of insects
in the months to come.

Exhibits:

- (1) D. Stewart:- a display case of fossil insects from the Eocene
formations of Green River, Colorado, including several
Diptera, Coleoptera and larval insects.

- (2) D. Holmes:- a case of butterflies and a few moths from the Malayan Peninsula. Several unusual and rare species were included.

Main Business:

The President, introducing the idea of Instruction Sessions in Basic Entomology, asked Dr T. New to talk on 'basic' insect external structure. After questions, the President thanked the speaker.

The meeting closed at 10.10pm.

MINUTES OF THE COUNCIL MEETING, 17 SEPTEMBER 1982

The meeting, chaired by Mr P. Kelly, opened at 8.00pm

Apologies: D. Crosby

Present: J. & C. Burns, P. Carwardine, K. Dunn, R. Field, M. Le Souëf, T. New, D. Stewart, K. Walker, A. Yen.

Minutes of the July Council Meeting approved (K. Walker/D. Stewart)

Correspondence: Received (M. Le Souëf/G. Burns)

Treasurer's Report: Deferred.

Editor's Report: K. Walker expressed dissatisfaction that no reply had been received from the Standards Association Clunies Ross House to his letter complaining about production standards of the last Victorian Entomologist. He and the secretary agreed to try to pursue this issue. Other methods of production should be investigated and members of council suggested several possible avenues for this. Two small changes to the introductory material are to be put forward at the next general meeting for discussion:

- (1) Deletion of the sentence, commencing 'The Society encourages corporate membership...'
- (2) Addition of an additional disclaimer to prohibit unauthorised abstracting or reproduction of journal contents.

More material is needed for future issues.

General Business:

- (1) Memorial for 'Zoo' Le Souëf. After some discussion, Council agreed that an appeal for funds to establish a Memorial be made to members in the next issue of the Victorian Entomologist, and through selected other avenues. It was agreed in principle

that interest from such funds should be used to encourage younger or other amateur entomologists.

- (2) ENTRECS. In order to ensure continued progress with the scheme, Council empowered D. Crosby to form a small subcommittee to examine priorities and feasibility of producing maps for butterfly distributions in Victoria fairly quickly.
- (3) Programme. Possible topics for meetings up to the AGM were suggested and discussed.
- (4) Membership. Several replies have been received (expressing interest in Society membership) to a letter sent by the editor to various Naturalists' Groups in Victoria.
- (5) Excursions. P. Carwardine gave additional information on the proposed Tallarook excursion. R. Field suggested the Cranbourne Annexe of the Department of Lands as a possible site for a later excursion.

The meeting closed at 9.25pm.

Appendage to Council Minutes.

A few members have expressed concern with regards to the addition of the proposed disclaimer to prohibit unauthorised abstracting or reproduction of Journal contents, therefore the reasons for the proposal are put forward for consideration before the next general meeting.

The present disclaimer appearing on the last page of the Journal reads: 'No article or paper appearing in this Journal may be reproduced elsewhere in whole or in part without the prior permission of the author and editor. The reproduction of taxonomic material shall not constitute publication.' This disclaimer is useless as the contents of the Journal are abstracted by Biological Abstracts and once in this form articles can be reproduced elsewhere and taxonomic material does constitute formal publication.

Articles appearing in the Vic. Ent. are not strictly referred. The writing style of the author is basically maintained and the contents are not seriously cross checked, therefore in its present form the onus is on the author to ensure that his or her article is scientifically justifiable and presented in an acceptable manner.

The purpose of the additional disclaimer is to ensure that the option is given to the author as to whether his or her article is reproduced. The sole disadvantage is reduction in circulation through removal from Biological Abstracts.

MEMORIAL FUND APPEAL

J.C. ('Zoo') Le Sueuf. 1905-1982

The Society is to establish a memorial to this outstanding Victorian entomologist. Most members will know that the Society in its present form, is almost wholly the result of Zoo's energy and enthusiasm in re-establishing it in 1961 and Council wishes to remember Zoo's contribution to amateur entomology in a tangible way - by making an award (probably annually) to an amateur or younger enthusiast in order to encourage his/her interests in entomology.

We hope that most members will be able to contribute towards establishment of a memorial fund. Please send your donations to the Treasurer (Mr R. Condon, 96 Shannon Street, Box Hill North) as soon as possible.

CORRIGENDA

In Volume 12, no. 4 page 44 in the article entitled 'Some Notes on the Early Stages of the Skipper *SABERA DOBBOE AUTOLEON* (MISKIN) (HESPERIIDAE: HESPERIINAE)' by W.N.B. Quick an error was made with reference to the colour of the ovum. The line (paragraph 2, line 2) should read:

'Cream when freshly laid, becoming greyish.'

Early Stages of *DELIAS ENNIA NIGIDIUS* Miskin

W.B.N. Quick

Blackmountain Rd., Kuranda, N. Queensland, 4872

Some additional notes which will complete documentation of the life-history of this northern species.

Ovum: Spindle-shaped, with vertical ribs and faint horizontal lines on the uppermost half, the vertical ribs flaring slightly at the apex to produce a coronet-like structure. Approximately 1mm in height with a maximum diameter about half this dimension. Glossy and almost translucent pearly grey-white when fresh, deposited on the underside of a leaf of the host. Contrary to the predicted appearance of the egg-mass, the eggs are laid with meticulous precision in a dual row, the eggs in each row alternating with, and inclined away from those of the opposite row. Each egg is set acorn-like in secreted adhesive to about half its height. In this instance each row consisted of six eggs, which hatched in 9-10 days (May).

Larva: First and second instars, head shining black, with scattered grey-white hairs. Yellow-green, with lateral and dorsolateral rows of long white bristles arising from slightly raised white tubercles. The cast capsules of the first instar appear to be carried on the bristles of the second instar for an appreciable period, but this may not be the case outside the sheltered environment of the rearing enclosure. The larvae are closely gregarious. First instar 6 days, second instar 10 days (May). Third and fourth instars, body green-grey, the head of the third instar larva shining black with scattered white hairs. The head of the mature larva is less glossy. A single grey-white bristle dorsolaterally on each segment, and a lateral fringe of shorter hairs. Four instars only were noted, the third instar lasting 10 days, and the fourth commencing to pupate after 13 days. Larvae of the third instar feed and rest gregariously, while those in the final instar feed more or less independently, but form clusters while at rest. As the larvae approach maturity, a substantial amount of silken web is spun over the leaves and twigs, while larvae of all ages, if suddenly disturbed

will drop from the host suspended by a single silken thread. Presumably under natural conditions they would reach the grounds and seek the trunk of the tree carrying the host plant.

Three of the larvae pupated on the host, the remainder on the sides of the enclosure. As is the case with *Delias mysis*, host mistletoes which are exposed to some afternoon sun appear to be preferred, especially those at no great height from the ground.

NOTES ON AND AN IMPORTANT EXTENSION TO THE DISTRIBUTION OF
THECLINESTES MISKINI MISKINI (T.P. LUCAS) (LEPIDOPTERA: LYCAENIDAE)

K.L. DUNN

16 Grace Avenue, Dandenong, Vic. 3175

The lycaenid *Theclinesstes miskini* (T.P. Lucas), until recently known as *Theclinesstes onycha* (Hewitson) (Sibatani and Grund, 1978), has been recorded from all of the Australian mainland with the exception of south and south-eastern Victoria (Common and Waterhouse, 1981). In the remainder of this state *T. minskini* has been taken from only a limited number of localities, including Hattah in the north-west, Mount Hope and Broadford in central Victoria. At these locations the species is locally common and adults can be frequently taken flying around wattles, usually the "Golden Wattle", *Acacia pycnantha*.

Like many other lycaenids, males of this species favour hill-topping and this behavioural tendency would account for the disproportioned ratio of males to females represented in collections. An abnormally low number of females have been taken in Victoria and as a result, this sex is considered a rarity within the state. This status is, however, most unlikely and probably due to the present collecting techniques.

Not surprisingly, the life history was unknown from Victoria until recently, when three immature larvae were recorded feeding upon the phyllodes of *Acacia pycnantha* at Wartook in the Grampians, during February 1977 (R.C. Manskie, 1977).

The same year a single male was taken at Mount Macedon. At the time it was uncertain as to whether the specimen had bred locally, or introduced from further north, by favourable winds (A. Atkins, 1977). On the information presented later in this report, it would appear probable that *T. miskini* is resident at Mount Macedon even though no further specimens have been published as recorded from this locality.

Late in the afternoon of 21 December 1980, a single freshly emerged *T. miskini* female was taken as it flew rapidly amongst the undergrowth at Reed's Lookout in the Grampian Ranges. It should be noted that the specimen was not flying in the vicinity of any *Acacia* species and was several kilometers from the nearest grove of *Acacia pycnantha*. Based on its perfect condition, the most likely explanation is that this lone female had ascended the granite outcrop in search of a mate. Interestingly, no males have yet been observed or taken hill-topping on this lookout, nor at any other suitable peaks in the Grampians.

On 16 January 1981 numerous males were observed hill-topping on Flinders' Peak in the You Yangs Forest Part (near Geelong). Although most of the sky was obscured by translucent stratus cloud, several specimens were taken as they flew rapidly around or settled on prominent phyllodes of *Acacia pycnantha*, during spasmodic sunny periods. Most specimens netted were found to be fairly worn and damaged indicating that they had been active for some period. Examination of near perfect specimens revealed that both lilac and blue forms were on the wing. Reasonable size variation between specimens was also noted, but this was unrelated to the colouring on the upper wing surfaces in the specimens taken.

As the larval food plant, *A. pycnantha*, was originally not a native to the You Yangs Forest Park*, the origin of this apparently well established colony of *T. miskini* has obviously been fairly recent. Since the late 1950's the You Yangs' flora has been replenished by the cultivation of thousands of native Australian trees many of which were *Acacias*. This activity, primarily inaugurated to restore areas damaged by the previous introduction of exotic species possibly encouraged the colonisation of

* Plantations of *Acacia pycnantha* and *A. mearnsii* were established for tan-bark purposes between 1884 and 1904.

T. miskini following its arrival in the district.

The You Yangs now designate the most southern known locality for this lycaenid in Australia, and thus represent an important extension to the species previously recorded distribution.

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KURANDA (OCCASIONAL) CHRONICLE

W.N.B. Quick

Blackmountain Rd., Kuranda, N. Queensland. 4872.

If discussions regarding the weather were eliminated from these notes, there would be little to comment on. One of the last things expected prior to moving up here was a winter differing little from one of Melbourne's milder efforts - and haven't they been a bit that way for a number of years until the present session? Kuranda, in common with a substantial tract of coastal eastern Australia, has suffered the effects of rainfall far below normal. The Barron Falls came up briefly but spectacularly for a full 20 hours, the result of the heaviest twenty-four hour downpour of the so-called 'wet' - a mere 85mm. The 'wet' could better have been referred to as the 'sweat' for it was nevertheless very hot and humid. One of the hottest summers on record.

A legacy of the dry conditions now prevailing, the winter cold has had a marked effect on the insect activity. Several weeks, quite literally, have passed without seeing more than perhaps one or two *Delias nigrina* (Fab.). On one particular day, the activity was so low that a single honey-bee was readily noticeable as it approached a lantana bush some twenty meters from the house. Two specimens of *Lampides beoticus* (Linn.) comprised the butterfly count for that entire weekend!

If Kuranda has fared badly, the higher tablelands districts have suffered worse. While the lowest temperature we could manage here was MINUS 0.5°C, Herberton I understand recorded MINUS 15°C. Damage to the rainforest canopy is very apparent, and many young plants, even under the canopy, have been killed or cut to the ground.

Entomologically, life goes slowly on. After the early satisfaction of having reared *Delias ennica nigridius* Miskin for the first time, and taking a very large Tettigonid not previously recorded from Australia, together with a new cicada species (collected independently but concurrently by Max Moulds), activity was restricted to searching unrecorded early stages, largely under the guidance of Graham Woods. A great deal of work is being, and has been, done on a number of the lesser known Skippers and Flats. It will not be pre-empting any proposed publication to state that this involves such species as *Chaetocneme porphyropis* (Meyrick & Lower) and the northern *Netrocoryne repanda* C. & R. Felder. The hosts of these and others are now well known, and several are being reared here. It is of interest that the group of plants species involved, the *Litsea* group, have also been found to be hosts to several lycaenids, including some of the *Philiris* spp.

The weather almost stopped the appearance of little *Celestrina tenella tenella* (Miskin), although two did in fact appear today. I had hoped very much to run down the host and early stages of this little gem, better called the 'Kuranda Blue' than 'Australian Hedge Blue'. (Apologies to CSIRO for the deliberate use of capitals and inverted commas for a vernacular). If the weather hadn't done so, the Main Roads Department would have just about have accomplished the same feat. The lovely forest 'tunnel' approaching Kuranda is gone, road-fringing trees gouged by dozer blades or left to die slowly at crazy angles in a mass

of shattered limbs. Other sections of 'road improvement' have been accomplished by tipping overburden 'over the brink' where it will smother the root systems in the first wet season in exactly the same manner as the Red Gums of the Boulevard at Burnley were decimated. Kuranda's approaches will never be the same. Off Black Mountain Road, behind the 100 meter fringe of window-dressing one sees what a dollar-hungry Bureaucracy allows the "Forestry" department and (?) associated mills to do.

On the subject of Bureaucracy gone mad, it may be prudent to advise intending visitors that in order to collect (unprotected) species of insects along the roadside on Blackmountain Road, it is necessary to obtain a 'permit to traverse' for State Forests from one of the offices or the District Forest Officer. To actually collect, a further permit must be issued by the Forests Office in Atherton, while, if entering a National Park to collect, a separate permit is required, for which referees may be required, and specific requirements stated. Should one be fortunate enough to have the weather co-operate, and the species still be flying subsequent to meeting these requirements, beware of heavy logging trucks on the road. These bear loads estimated at twenty to twenty-two tonnes of logs (OUR logs), to which one must add the mass of the prime mover and trailer, over bridges clearly marked "Maximum Load 12 Tonnes Gross". Such is the regard of the Bureaucracy for its own regulations.

Several entomologists have also been confronted by a person representing himself as 'honorary Ranger'. Both Dr Grant Miller and Don Sands have had this experience, as well as myself. The advice here, on good grounds, is to obtain his name, report him to the Forests Office, and take whatever legal action is necessary to deal with persons impersonating an officer of the state. There is no position with that designation. Such is the situation in the "Sunshine State".

Of more interest to lepidopterists are a few little notes on more butterfly hosts, and behaviour. The first note involves, again, *Celestrina tenella*. Entomologists seeking this species will find any of the fish-emulsion fertilizers, diluted as directed and watered on the ground, a very useful 'bait' or lure for both sexes. *Prosotas nora auletes* (Waterhouse & Lyell) is also attracted to the brew.

On a personal level, I have never been convinced that *Danis danis serapis* Miskin the large green-banded blue (please note CSIRO!) utilised *Alphitonia* as a host in this area. I have reared *Danis* larvae from three species of *Alphitonia*, but all have produced *D. hymetus* (C. & R. Felder). Quite recently, and almost concurrently, Ray Straatman found unidentified larvae on a plant in his garden. These were not attended by ants, and appeared similar to larvae of *Danis hymetus*. *Danis danis* was later observed ovipositing on the plant, tentatively identified as *Connarus conchicarpus*, both in that garden, and by Graham Wood and myself here in Kuranda. The plant is a very coarse, woody twiner, often giving the appearance of being a sapling. Young shoots, particularly near the ground, are favoured. These often appear when old trees fall or limbs supporting the climber collapse. The young growth is velvety, and deep red-brown, but the foliage develops extremely rapidly into large (20-30cm) glossy, reddish and flaccid 'leaves'; before maturing to a relatively harsh texture and deep green colour. Examination shows the apparent individual 'leaves' to be in fact pinnae - the leaves are a very large 5-pinnate compound structure with a distinctive thickening and bend between the petiole and blade. If rearing is successful it is proposed that a description of the early stages will be made at a later date.

Perhaps the highlight of the start of this season has been finding the host of *Hypochrysops pythias euclides* Miskin, the peacock jewel. This morning, a little milder than usual, I ventured out to see what was doing at an early hour. Feeling a little like Jimmy Durante descending from his carriage, and clutching the net in one hand I stepped over the electric fence (to keep the bandywallaroos out), and headed for a young *Commersonia* on which all manner of insects rest at times, and which also bears a mistletoe which *Delias mysis* (Fab.) does its best to kill. The previous days had been too cold for much to even move, yet here were two male *H. pythias*, quite perfect, in the early morning sun! Quite clearly they had not been there the day before, so the host must be at hand. The mistletoe had been bare for months and got second rating.

I noted that, among the legion holes in the large leaves, there were areas where the upper surface had been freshly eaten, but could not find any trace of larvae within reach. There were also several small cracks, and two *Aenetus mirabilis* Rothschild burrows, one of which is active,

the other abandoned.

Graham Wood came to the rescue later in the day, carrying a ladder to the tree for me. To him goes the credit of locating first some egg shells, then a mature larva in a crack. *Iridomyrmex* (affin.) *gilberti* Forel. was attending the larva, and present in other cracks and the abandoned *Aenetus* burrow.

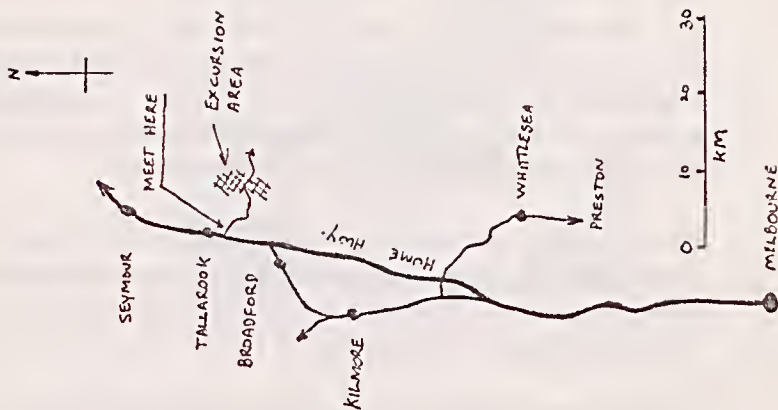
We decided to prune the tree heavily, retaining all cracks, adequate foliage, and the mistletoe, so that all would be within reach for any later brood. Every leaf of the prunings was examined for eggs or larvae. Eggs of a number of lepidopterous insects were found on the foliage, but none of *H. pythias*. Eggs are laid only, it seems, near larval sheltering places. It was also decided to bandage the tree in the 'Ogyris' fashion, and while doing this, a young lycaenid larva, not unlike that of *H. byzos hecalius*. Miskin, was found resting between veins on the underside of a leaf. It is not clear to which species this may belong. It may in fact be a larva of *Prosotas nora*, which appears unduly interested in the same tree. Perhaps time will tell, with a little better than average luck.

So the days pass. Occasional visits by the boys from CSIRO Div. Ent., by local entomologists, and more lately by David and Mary Crosby are enjoyed enormously. David will say more by me than by him - he saw at first hand what a poor season can be like. The unpublished work done by David Lane, Graham Wood, John Olive and other amateur entomologists is staggering - and there appears to be little overlap - each lives in a distinct climatic and vegetation zone. Perhaps one day we'll get it all together. But there's probably a regulation against publishing in any Queensland publication - all wood pulp must go overseas or be burned.

August 9, 1982

EXCURSION TO TALLAROOK

DATE Sunday November 28th
 LEADER Peter Kelly
 MEETING PLACE Ennis Road, just off Hume Highway, just after 80 km post.
 MEETING TIME 10.45 AM. Allow 1½ Hours from GPO Melbourne
 EXCURSION AREA Tallarook State Forest and Mount Tallarook to the east of the meeting place.
 FOOD Bring your lunch.
 MAPS Broadbent No. 301, 150 km around Melbourne
 Dept. of Crown Lands, Australia 1:100,000 No. 7923 Yea.
 Police Tallarook 92 1035
 Doctor Broadford 84 1317 Dr. S. C. Jain
 HOSPITAL Kilmore 82 1311
 TRANSPORT If you require or can offer, phone Peter Carwardine 509 0622 Office, 211 8958 Home



NEWS FROM ABROAD

The following are some extracts from a letter addressed to Mr David Stewart from Mr Shane McEvey:

"My study is coming along well; my thesis is tentatively entitled: Courtship behaviour in the *Drosophila nasuta* subgroup. I have had a few trips into the bushveld-Northern Transvaal and Swaziland. I've seen some beaut butterflies and have collected many Drosophilids which have yet to be identified.

..... at the next Ent. Soc. Vic. meeting would you see if anyone comes across scorpions especially in northern Australia would they pop them in alcohol and send them (via my father at the National Museum if they wish) to me".

Shane's present address is: University of Witwatersrand,
1 Jan Smuts Avenue,
Johannesburg, 2001,
SOUTH AFRICA

NEWS FROM THE NMV ENTOMOLOGY DEPARTMENT

Ms Cathy Yule has been appointed as the temporary replacement of Miss Elizabeth Matheson until the position becomes vacant in May 1983. Cathy is a postgraduate student from Monash University, having recently completed a Masters thesis on Plecoptera.

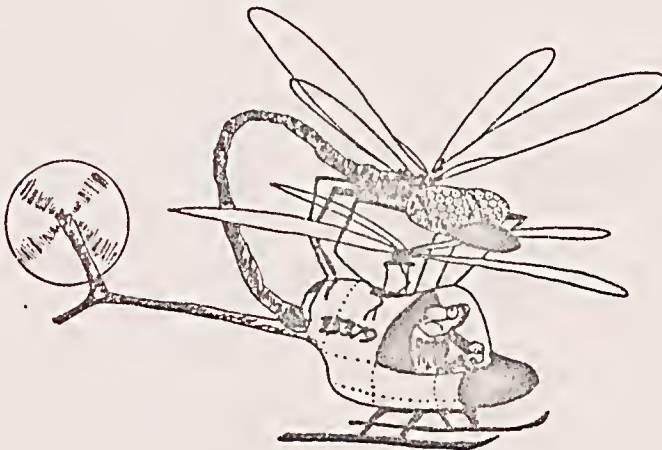
Mr Gordon Burns has agreed to tackle the large job of sorting our acquisition Buprestidae collection.

Dr Shelley Barker, University of Adelaide, was a recent visitor to the department.



"Boy I hate walking through this place at night."

Redrawn from Antenna (1982), Vol. 6, no. 3



Redrawn from Playboy. Artist. Shoemaker.

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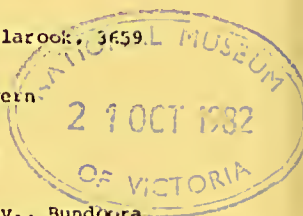
OFFICE BEARERS 1982/1983

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<u>Excursion Secretary</u>	Peter Carwardine, 2a Victoria Rd., Malvern, 3144 Telephone - 211 8958 (home), 509 0622 (office hours)
<u>Past President</u>	- David Stewart, 3 Vale St., West Rosebud Telephone - (059) 86 2705
<u>Councillors</u>	- Mesdames Joy Burns, Mary Le Souëf, Dorothy Johnson, Messrs David Crosby, R. Field, A. Yen, K. Dunn.

DIARY OF COMING EVENTS

October 22nd	- R. Field, 'Biology of Mites'.
November 19th	- Council Meeting
December 10th	- Members Night: Films by L. & K. Dunn; call for exhibits
February 18th	- Instruction Session, Dr T. New

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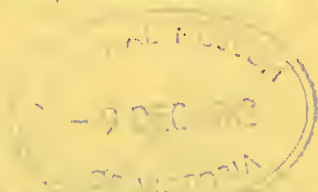


Ento
1982
VOLUME

VOL. 12 No. 6



DECEMBER 1982



VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist". The Society encourages corporate membership of schools and study groups, of libraries and of University and departmental staff.

OBJECTIVES

The aims of the Society are :

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 P.M. on the second last Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S)
Student, Associate.....	5.00 (Aust)	" 5.75 "

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE GENERAL MEETING, 22 OCTOBER, 1982

The meeting, chaired by P. Kelly, opened at 8.05 pm.

Present: G. & J. Burns, P. Carwardine, R. Condron, D. Crosby, K. & A. Dunn, R. & J. Field, D. Holmes, M. Hunting, S. Johnson, M. Le Souëf, T. New, B. J. O'Neil, S. Smith, D. & N. Stewart, R. Vargi, K. Walker, I. Watkinson, A. Yen,

Visitors: K. Clark, R. Heard, C. & C. McQueen, R. Pritchett, M. Verdugo.

Minutes of the August general meeting approved (D. Stewart/K. Walker)

Correspondence: Amongst other correspondence, the Secretary read a letter to the Minister of Conservation, replying to a request to the Society to submit comments to the State Conservation Strategy.

Received (R. Field/ M. LeSouëf)

Treasurer's Report: The Treasurer reported that there are at present 61 financial members. Credit balances are (cheque acct.) \$868.12, (publications acct.) \$280.63.

Received (D. Crosby/D. Stewart).

Excursions: P. Carwardine reminded members of final arrangements for the Tallarook excursion on 28 November 1982.

Editor's Report: K. Walker commented on the improved presentation of the recent Victorian Entomologist, and expressed the hope that this would be maintained. More articles are needed for forthcoming issues. Considerable discussion ensued on the possible need for an additional 'disclaimer' in the Journal. The matter was referred to the next Council meeting.

General Business:

- (1) The President reminded members that the memorial appeal for Zoo LeSouëf had now been launched, and that all donations would be welcome.
- (2) D. Crosby reported briefly on progress of forming the ENTRECS subcommittee.
- (3) M. LeSouëf conveyed greetings from A.F. Atkins.
- (4) I. Watkinson asked for possible interest in undertaking an insect survey of Rotoman Island.

Exhibits:

- (1) M. Hunting: a case of butterflies and larger moths from New Guinea.
- (2) R. Condron: two butterflies from the Coolangatta area.
- (3) I. Watkinson: a selection of publications from the South Australian Museum.

Main Business:

The President then introduced the speaker, Dr R. Field, to talk on 'Biology of Mites'. After a wideranging talk on mite structure, classification and biology, illustrated by many slides, Dr Field was thanked by the President who commented on the unusual and high quality of many of the scanning electron micrographs used.

The Meeting closed at 9.55 pm.

The Council Meeting of 19th November 1982 was cancelled.

NEWS FROM THE NMV ENTOMOLOGY DEPARTMENT

With the approach of summer, northern Entomologists are beginning their treks to the supposed frozen lands of the south. Dr Ian Galloway, Senior Entomologist with the Department of Primary Industries, Queensland paid us a two day visit to examine our *Scelio* (Scelionidae: Hymenoptera) collection. Dr A. Ewart, Department of Geology, Universtiy of Queensland spent a day working on the cicada collection and another cicada enthusiast, Mr Max Moulds is currently spending a week with us. The department was visited briefly by Dr S. Endrody of the Transvaal Museum, Pretoria, South Africa.

Summer is the time for field excursions and Dr A. Neboiss and I have already made two successful trips. Arturs visited Tasmania for a week to advise the Inland Fisheries Commission on the re-introduction of the Shannon-moth (Caddis-flies) to the Shannon River above the Shannon Lagoon. The Shannon-moth used to attract trout up the river at certain times of the year and the trout would attract the tourists. I visited the dry north west of our state and collected numerous specimens of our native Australian bee fauna.

A Viewpoint by Allen Sundholm

The author originated the proposal that the insect collections held in institutions and in private hands should be classified as part of the National Estate, being material of considerable scientific and historical value, particularly as regards material gathered from areas now cleared or seriously depleted of their insect fauna.

Both institutional collections (Museum, Universities, Agricultural and Forestry Departments etc.) and private collections are prone to deterioration due to lack of interest, finance for upkeep and theft amongst other reasons; however, the institutional collections are regarded as the better repository for security, access, centralisation and overall long-term upkeep reasons. Apart from a few recent examples of poor maintenance of this valuable resource, most collections in Australian Institutions have fared well over the decades.

As regards private collections, it might be worth noting that the term "private" may in fact be an illusion. It may surprise some people that specimens collected under permit in National Parks and Nature Reserves etc. are owned by the Crown, and which has right of possession. Much the same would apply to all specimens taken on vacant Crown Land, roadsides, beach reserved and other reserves such as municipal parks and public land leased to sectional interests. Leases from the Crown of land such as in the Western Lands Division would also seem to be included. As a result the only specimens which could be said to have been legally collected are unprotected species gathered on freehold land. Even if all this is true, a Statutory Limitation may apply preventing the Crown to initiate any action after say 6 years of date of collection. A principle of retrospective possession may also apply where the Crown's right of ownership and possession is denied after a certain period. In any action that is on a criminal basis the Crown must also prove it's case "beyond a reasonable doubt", a much higher burden of proof than that required in civil actions. It would be a despotic system that failed to recognise the outweighing benefits to society and science of continued collection of insect specimens. Some possible guidelines to such continued collection in light of changing attitudes will be outlined further below.

Regardless of what party in fact owns the material in a private collection, the author suggests that there should be some system of ensuring that specimens held in private collections will end up in a suitable institution on the death of it's gatherer. At the present moment there is no real guarantee of this happening but perhaps there should be. It is fortunate indeed that many private collections of note of yesteryear were in fact so donated, and such material has made up the vast bulk of the collections now held in institutions. Many professional entomologists owe their jobs to the existence of this material. This process of donating large and/or scientifically valuable reference material continues today, evidenced by the Ted Harris bequest to the James Cook University, the Dallas Doolan Coleoptera Collection being handed to the Australian Museum by relatives, the C.G.L. Gooding Collections to ANIC. One living expert on moths has generously handed over the greater part of his extensive collection to ANIC over recent years. These and other contributions to the material to be passed on to future generations are to be highly commended.

But what of the others? It is proposed that private collections be included on the Register of the National Estate, to be handed over to the Crown via a suitable institution upon the death of the gatherer. The Crown should also allow the gatherer to hold the collection as bailee until death if the specimens are to be for the most part regarded as already owned by the Crown. A voluntary system may not ensure all important material is passed in.

FUTURE ROLES

The author has already outlined a major part of the role amateur entomologists in the Circular of the Royal Zoological Society of New South Wales Entomology Branch. (Circular No. 2., October 1979 pp. 3 and 4). In addition to what was said therein, the author sees present-day amateurs as more and more having to justify their activities to various land authorities such as National Parks and Wildlife services as pressure for blanket protection of insect species continues. The pros and cons of such protection has already been widely discussed amongst the various entomological organisations which will be affected, and which will not need to be added to here. However, legislation or not, the amateur who wishes to continue his interest should perhaps consider whether he is going to

carry on collecting specimens largely for personal or aesthetic reasons, not produce data, and thus delay the benefits of the information in his collection passing on to others until his death, or choose to utilise the data, personal knowledge and experience he has gained for immediate benefit to others. If insect protection legislation becomes widespread, the undecided amateur may find he will have little choice anyway.

The author would strongly urge that the latter approach be adopted if not already done so by his readers. Besides being able to continue in the field of entomology should legislation become oppressive, and he can justify his research, the amateur will be able to contribute directly to our understanding of insects in Australia in the present day. The amateur is capable of only so much, but the fields of basic distribution, habitat preference, early stages and ecology are poorly understood for a great many insect groups, so provide ample room for research projects. Of particular value in this day of fast-disappearing natural areas is research of value towards conservation of the habitats of insects. For example, the mallee heath and woodlands are now being cleared as fast as government can get away with it, and in the eastern states rainforests are under considerable pressure from logging.

The amateur can do a lot of the field work gathering distributional data and formulating proposals for preservation of various natural areas, or delve deeper into behavioural studies and seeing why that behaviour arose. The amateur will also soon find that his overall understanding of the natural environment will broaden immensely, which in turn will make him a more formidable force towards presenting cases for conservation.

Ideally, complementary assistance should be given to the amateur by the various governmental conservation bodies to aid this approach, instead of the present practice some of these bodies have of attempting to hinder or half the interest and work which could make or break a particular proposal.

THE CODE OF ETHICS

A code of ethics should be adopted by both amateur and professional participants in the field of entomology.

First and foremost: The Principle of Individual Conservation

A personal policy of not collecting too many individuals of each species makes good sense in many ways. One, there is usually no reason for long series to be collected. Good reasons for such action are few and far between, and the author would dare to say that they do not apply to the amateur. The only case where such action can be condoned is probably where the habitat is in the process of being destroyed or is in imminent and confirmable threat of such destruction. Two, large amounts of material is often left unpinned or unset and goes to waste. Three, there is no real guarantee that even in cases where the habitat seems fairly vast and unthreatened, that the activity of reducing an insect's population in one area does not have a more than temporary effect, or will affect the lives of other living things. Though such effects may not be likely, it is best to leave as many individuals behind as possible so they can continue to survive with a better overall chance. Four, there is much personal fortitude gained, and pride, when one knows he has done what is really the right thing by taking a small series only in this age of reduced habitats.

The author would like to propose a series limit for private collections, of 18 specimens per species, to be known as "a full set". A few samples from different localities are suggested. Any excess should be passed on to colleagues with less than a full set, or to a suitable institution. The number 18 is already being adopted by various present day amateurs, and was the series self-imposed by the late Dallas Doolan, whose collection was extremely well laid out and organised as a result. This figure has been found to be especially favoured by coleopterists, but a lower figure may be found more suitable to those interested in lepidoptera solely due to the amount of room butterflies and moths can take up in a cabinet or storebox. Some people may find that a single pair of the more common species would be quite sufficient. The author personally knew one amateur who reduced his entire collections of butterflies to a series of six specimens for each species or race, and the result was quite outstanding to see. A classic example of a fine collection made up of small series was the Schrader Collection, now sadly broken up.

Two: No Specimen Shall be Sold to Make a Profit

The idea of introducing commercialism into the activities of collection of insects is abhorrent to this author, and to many other persons that he has discussed this with. There is no scientific justification for such behaviour. Legislation which prevents trade in insect specimens caught in the wild and sold for economic purposes should be fully supported. However this author supports the proposition that a sale can be justified at cost (without profit) where large expense was involved in obtaining the specimen, that the purposes of obtaining the specimen and selling it was not so as to recoup the cost of a trip, where small numbers of specimens only are involved, and sales only being between persons interested in completing a full set, or to an institution. It may be preferable in the end to disallow all sales whatsoever, however the above exceptions should perhaps be considered.

Three: Label Data Shall be Complete and Unrestricted

It must never be forgotten that specimens without label data are scientifically useless. Collection of a specimen, without recording at least the date and precise locality on a label attached to the specimen via the pin or similar means, is not justified. The use of codes or number cross referenced by a book where the data is recorded is a dangerous practice as most of us know, and should be discouraged at all times.

Where possible information concerning plant or flower hosts and habitats where the insect was found should be included on the labels, several labels may be found to be necessary for such information.

For recording of further information that would be too detailed or comprehensive to put on labels, eg. weather, rainfall, condition of the habitat following fire, travel notes, road conditions in the area etc. a journal in note or prose form may be found to be suitable. This author has kept notes of many trips away and which formed valuable reference material for additional visits afterwards. There is historical value in journals as well, being windows into the past for our entomologists of the future.

In the past, and possibly in the present, some people restricted information on where particular specimens were found. This is a practice the author cannot agree with in the very great majority of cases. Restriction of information may have been done in order to maximise the survivability of a particular colony or race, such as with the Azure Butterfly (*Ogyris otares* C. and R. Felder). However this is rarely the case. Some may say that to give out too much detail will allow hordes of others to descend on the locality and collect it out, or gain specimens the holder of the information did not want another to gain. In this day and age when rainforests and mallee heathlands are disappearing at an accelerating rate, such restricted cannot be tolerated. We must work together for the common good, which now means all priority must now be given to ensuring the very survival of the insect concerned in the face of constant threats by those who would clear the land for personal gain. It means self-control by not collecting large numbers, and it means co-operation in ensuring our native insects' habitats are fully protected. Too often the professional cannot speak out against a particular development proposal for fear of losing his job or loss of promotion. The amateur is far more free to participate in the conservation process. While some of us may play games of 'I got x but I'm not going to tell you where I got it' the very places where the specimens were got could be being bulldozed out of existence that very moment, when the information could be valuable towards a conservation proposal for the area. Entomological organisations must now get together and co-ordinate and create solid conservation proposals to protect the very insects we all claim to enjoy so much. Personal interest must never be allowed to interfere with the greater need to protect the living specimen in its habitat, and such must be demanded by all entomological societies which have as their aims the cause of valid and justified study of insects. For there to be such studies, there must be insects. For there to be insects, there must be their habitats, otherwise the future will have row after row of slowly deteriorating specimens of extinct races and species in the Museums; all marked 'No further Information Available, Habitat Destroyed.'

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: Members are invited to submit their thoughts on the number of issues raised in Mr Sundholm's viewpoint and these will be published in the following issue.

ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES' WORKSHOP REPORT

By G. & J. Burns, 3 Inglis St., Mornington

Gordon and I attended a workshop conducted by the Entomological Society of New South Wales at Sydney University of September 25th and 26th 1982. It was intended for amateur entomologists from the beginner to the more advanced collector. A total of 55 people attended and came from as far away as Brisbane, Canberra and Melbourne.

After an introduction by Courtney Smithers, Max Moulds gave the first lecture on light collecting techniques. A gear loaded Eric Shipp then spoke on the different aspects of collecting, active and passive, and the equipment needed for each. Andrew Atkins was next with examples of his work, explaining how to draw illustrations, including special techniques used for drawings intended for publication.

The workshop participants then adjourned to the laboratory to try their hand at illustrations, each having the use of a microscope provided by the University. This was followed by a talk on the use of microscopes by Jenny Anderson and various microtechniques by Barry Moore. The laboratory and equipment were available for use at any free time during the weekend, with students present to help with any queries. Lunch was then taken in a small laboratory where exhibits and displays were on view.

Barry Moore commenced the afternoon session with a very interesting T.V. demonstration on genitalia dissections and all participants were then given the opportunity of making microscope slides.

Exhibits were viewed following a break for afternoon tea, and Densey Clyne with the help of Jim Frazier then gave an illustrated talk on insect photography. As this was the final lecture of the first day, most participants retired to a lounge where an informal dinner had been prepared. This allowed us to reinforce the many new acquaintances made that day.

Sunday's lectures began with 'What to Do' having caught your specimens and was demonstrated by Graham Brown with his suggestions on the preservation and storage of insects.

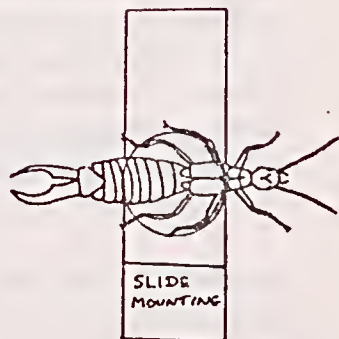
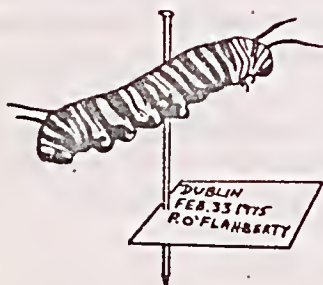
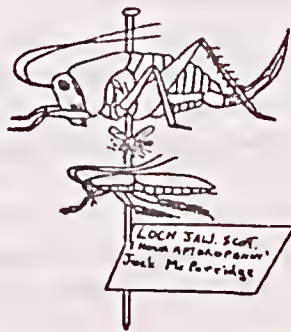
Geoff Holloway gave a talk on the different formats of entomological literature and the means by which to search this literature for specific information. Photostatted examples from Zoological Records, Entomological Abstracts and Monographs by Wilcox and Smithers enabled us to follow the points he made. Courtney Smithers explained the use of keys for identifications and we once again adjourned to the laboratory to try our new found knowledge on keying insects to Order.

Barry Moore and Max Moulds then gave some hints on the procedures used with the preparation of papers for publication followed by Andrew Atkins explaining the techniques necessary when rearing insects to obtain perfect specimens.

The final lecture was by Murray Fletcher explaining the enormous field available to amateurs for various Research Projects. He clearly showed us that the field is wide open for amateurs to contribute valuable knowledge on Entomology in Australia. Except for a few groups of insects there is so little known of the remainder, many of which have not yet been named let alone details on their biology or life histories.

The efforts of all who contributed to the running of the workshop was commendable. We met many interesting people and came away with ideas to improve our own contribution to Entomology. Many thanks to the Entomological Society of New South Wales for making the workshop possible, to the Sydney University for the use of their buildings and equipment and to the students who acted as laboratory assistants.

The Last of the Strange Pinning Methods by G. Monteith, A. Postle and
D. Hancock



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<u>President</u>	- Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659 Telephone - (057) 93 8230
<u>Vice-Presidents</u>	- Peter Carwardine, 2a Victoria Rd. Malvern Telephone - 211 8958 Gordon Burns, 3 Inglis St., Mornington Telephone - (059) 75 7370
<u>Hon. Secretary</u>	- Dr Tim New, Zoology Dept., LaTrobe Univ., Bundoora Telephone 718 1007 (home) 479 2247 (uni)
<u>Hon. Treasurer</u>	- R. Condron, 96 Shannon St., Box Hill Nth., 3129 Telephone - 88 6300
<u>Hon Editor</u>	- K.L. Walker, National Museum of Victoria 71 Victoria Crescent, Abbotsford 3067 Telephone 419 5200 (NMV), 481 2043 (home)
<u>Excursion Secretary</u>	- Peter Carwardine, 2a Victoria Rd., Malvern 3144 Telephone - 211 8958 (home) 509 0622 (office hours)
<u>Past President</u>	- David Stewart, 3 Vale St., West Rosebud Telephone - (059) 86 2705
<u>Councillors</u>	- Mesdames Joy Burns, Mary Le Souef, Dorothy Johnson, Messers David Crosby, R. Field, A. Yen, K. Dunn.

DIARY OF COMING EVENTS

- December 10th - Members Night: Films by L.
& K. Dunn; call for exhibits
- February 18th - Instruction Session, Dr T. New

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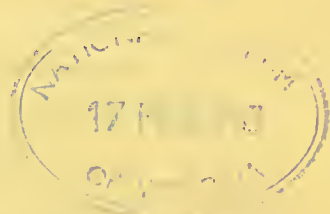
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VOL. 13 NO. 1



FEBRUARY 1983

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist". The Society encourages corporate membership of schools and study groups, of libraries and of University and departmental staff.

OBJECTIVES

The aims of the Society are :

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 P.M. on the second last Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S)
Student, Associate.....	5.00 (Aust)	" 5.75 "

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

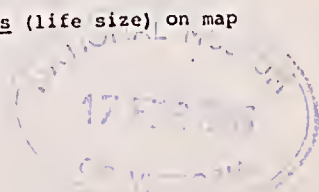
CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.



The meeting was chaired by P. Kelly, opened at 8.05pm.

Apologies: D. & J. Holmes, A. Yen

Present: G. & J. Burns, P. Carwardine, R. Condrón, D. Crosby,
K., L., N. & S. Dunn, R. & J. Field, B., D., M. & R.
Garrett, M. Hunting, S. Johnson, A. & I. Kimpton,
M. Le Souëf, G. Milledge, C. & C. McQueen, T. New,
B. O'Neil, D., N. & C. Stewart, C. Stahl, R. Vargi,
K. Walker.

Minutes of the October meeting approved (J. Field/G. Burns)

Correspondence: Received (D. Stewart/J. Burns)

Treasurer's Report: R. Condrón reported that there are at present 63 financial members. Credit balances are cheque account (including donations to the Memorial Appeal) \$969.33, publications account \$280.63. Received (K. Dunn/D. Stewart).

Excursions: P. Carwardine, aided by several excursion participants, reported on the Tallarook excursion.

Editor's Report: K. Walker emphasised the need for articles and notes for forthcoming issues.

General Business: P. Carwardine informed members of the appearance of B. D'Abrera's 'Butterflies of the Oriental Region, Part 1'. R. Vargi commented that several copies of the 'Afrotropical Butterflies' in this series were on sale at greatly reduced priced in Melbourne.

Exhibits:

- (1) K. Dunn - An unusual jewel beetle *Juliodimorpha bakewelli*, collected recently in the Big Desert.
- (2) C. McQueen - (i) A series of *Ogyris* from Berri/Renmark area.
(ii) A pupal case of *Ornithoptera p. euphorion*, to illustrate the habit of the larva binding the leaf onto the tree before attaching to pupate.
- (3) T.R. New - (i) A sheet of pressed leaves of *Eucalyptus marginata* mined by the Jarrah Leafminer *Perthida glyphopa*.
(ii) A drawer of Brazilian Sphingidae.
- (4) M. Hunting - A plant of *Pomaderris* with a feeding larva of *Hypochrysops byzos*. He also commented on butterflies recently seen at Genoa Peak.

- (5) S. Johnson - A stump-tailed lizard.
- (6) D. Crosby - A selection of insects from Wilson's Promontory.
- (7) R. Field - (i) A plant of skeleton weed to illustrate the various biocontrol agents (rust, euophyid mite, cecidiomyiid fly) being assessed in Australia. (ii) A pickled sample of Silver Leaf Nightshade with nematode galls. Prospects for biocontrol of this weed were discussed.

The President then invited L. Dunn to show some of his films. In introducing the first one, L. Dunn paid tribute to the memory of Zoo Le Souëf, who figured largely in the film.

- (i) The ESV Licola excursion 1979
- (ii) Northern Queensland
- (iii) Blue Lake City: Mount Gambier

In thanking the 'Dunn Family', P. Kelly remarked on the highly professional quality of the films, which were warmly applauded by the audience.

He then wished all members the compliments of the season and invited all present to partake of supper. The formal part of the meeting closed at 9.45pm.

COLLECTING BUTTERFLIES IN SRI LANKA

Tony Morton

32 Chatsworth Road., Prahan

Over Christmas and New Year 1981 - 82 I was fortunate enough to be in Sri Lanka with my family for a month. Naturally I took my net with me and spent every spare moment observing and catching butterflies! Although the island is very cleared (after all, it's been quite thickly populated for 2,500 years) there were still a few patches of jungle and a lot of insects around even in the centre of Colombo. Wildlife was abundant: monitor lizards under our rest-house windows, elephant, red deer, mongooses, at least two species of monkey, a glimpse of a leopard, and the birds were magnificent; every paddy field was full of storks, herons and other waders; orioles were common in the gardens, and every clump of woodland had its paradise flycatchers. In one short afternoon at Kumana

Bird Sanctuary, apart from being charged by an elephant, we must have seen fifty or sixty species without really looking: painted storks, purple coots, three sorts of bee-eater, Adjutant birds (a huge stork, about five feet tall), hornbills etc. etc.

My collecting began in a suburb of Colombo, in a piece of waste land where some jungle regrowth had occurred and there was quite a lot of lantana. I must have taken forty species in an afternoon in that disused building site and observed many more. Early in the evening I took a damaged specimen of *Idea lynceus*. I let it go as a lot of one wing was missing, thinking I'd soon find another. I never saw this species again!

Next I visited the Labugama reservoir; a beautifully laid out and landscaped stretch of water, built some hundred years ago, about 40 km. east of Colombo and requiring a permit to enter. The reservoir is surrounded by thick jungle and produced several different species. Collecting was difficult because of the impenetrability of the forest and my inability to find a spot where insects congregated.

Our next stop was at a resthouse some 200 km east of Colombo which was idyllically situated by a creek with good jungle on the far side. 2,000 feet above sea level, the rooms had hot water for the first time and one blanket on the beds. Christmas dinner consisted of rice and curry. In the jungle the Ceylon Birdwing, *Troides darsius*, is quite common, and I much enjoyed watching these huge insects gliding so effortlessly round the tree-tops or performing their delightful tumbling courtship flight so beautifully described by Bernard d'Abrera in his book on birdwings. The best collecting was done along the upper edge of the jungle where there was a lot of lantana overgrowing old cultivation.

Arugam Bay, on the east coast of Ceylon, was our next destination where we spent a week in a beautifully but simply planned guest-house. A minute red ant, completely undeterred by naphthalene, nearly destroyed my entire collection here, until I put the box of papered butterflies on a table with each leg standing in an ash-tray full of water. In the garden several species of Pierid were in evidence - particularly *Catopsilias* and *Appias*. Other species patrolled the hedgrows: a *Colotis* at grass-height, a *Delias* along the lower branches of the trees. *Nymphalids* were apt to jump out of every bush, while now and then a red-marked, red-bodied swallowtail, *Papilio hector*, flying very like our own *Pachilocta*

polydorus, would cut across the garden following some clearly defined flight-path. All over the ground a wild passion vine sprawled and on it were many specimens of an *Ac Reid*, marked very like our *Acraea andromache*, but coloured pale orange. Arugam Bay is very popular with surfers during the summer months, and many Australians go there. Indeed we met a couple from Rockhampton who liked it, and Sri Lanka, so much, that they had lived there for five years - on next to nothing - and had built themselves a charming bamboo hut in the village.

Then up to the tea district, back to hot water taps and sometimes two blankets. In Nuwara Eliya and on the way to Horton Plains we came across forests of eucalyptus (Tasmanian Blue Gum, I think) and wattle (*Acacia decurrens*, perhaps), planted to prevent erosion and as fuel. For half an hour on end we would drive climbing through these woods - as alien as pine plantations in Gippsland - and easily imagine we were back in Victoria. On the Plains, however, at 6,000 feet, it was clear and frosty, the natural vegetation seemingly being open plains (called patnas) and a thick scrubby forest of rhododendron, *Michaelia* and *Tristania*. Along the tracks leading through this forest a few butterflies were taken. As expected, they were different from the species found lower down. *Argynnis hyperbius* was there, a brown *Danaus furcata*, only found in Ceylon in its mountains, a beautiful *Lethe*, the Blue Admiral, *Vanessa canace*, and some *Lycaenids* and *Hesperiids* not seen elsewhere. From 'World's End' we could look down on the rest-house we'd been staying at 10 days before; a sheer drop to 4,000 feet. Horton Plains is a beautiful, peaceful place. The crisp climate was a pleasure after the tropical heat lower down, and once day visitors had returned to the plains, there was no-one around: a rare event in Sri Lanka.

Kandy was next; an interesting hotel: The Olde Empire Hotel (Double room \$4.00 a night)! There were indeed signs of Empire in Kandy: a magnificent Botanical Gardens, the old garrison churchyard, now much in disrepair, with the tombstone of a Major Russell inscribed: "Killed by an elephant" a magnificent library of leather-bound books untouched since the early 50's and now ruined by damp. Backing onto the Temple of the Tooth, is a largish area of jungle, the Udewatte Kalle, surrounded by the city of Kandy, and miraculously preserved. It was alive with insects, especially Pierids, and collecting there was excellent. The peace of the paths through the jungle after the noise of the city was extraordinary.

After a quick visit to Jaffna, the centre of Tamil culture on the Island, which produced a great contrast in its dryness and aridity to the southern part of Ceylon, and also some very different species, we spent a few days in Anuradhapura, the sacred city of temples and the ancient capital of Serendib. I discovered a stretch of woodland West of the city and there took several new species on the lantana that infested its edge. It was a particular thrill to catch *Papilio crino*, which is most beautifully marked and covered with metallic green scales. As I cycled back to the rest-house I noticed a large butterfly flying slowly up and down a creeper-laden tree. I thought it might be a *Danaus* but on catching it found it to be a perfect specimen of *Cethiosia nietneri*, the Tamil Lace-Wing. This was a most exciting finish to my collecting on this lovely island.

I am compiling a list, which will follow in due course, of the butterflies caught during my stay. I missed a lot of course, and probably did not observe many more still. My principal reference book is 'The Butterfly Fauna of Ceylon' by L.G.O. Woodhouse, printed in 1949. Some of the *Lycaenidae* and *Hesperiidae* will have to await identification until I have set them.

OBSERVATIONS IN THE BACK YARD

K. Walker

71 Victoria Cr. Abbotsford 3067

During the Christmas period I journeyed north to Brisbane to my home in the suburb of Greenslopes. Our yard has sometimes been described as a jungle as the house is completely surrounded by numerous trees and shrubs many adorned with orchids and staghorns. The trees and shrubs that have been chosen are those that are attractive to the native fauna so that at any time of the year one can walk around the yard and see many varieties of birds, lizards and insects. Of particular interest to myself is a large 9m high *Buckinghamia celissima* (Proteaceae) which around the Christmas week is completely covered with white blossoms. Many a relaxing hour I have spent sitting in the shade of the Leopard tree and watching the numerous insect that frequent the blossoms. This year while sitting watching the tree I thought of visiting Victorian

collectors and how they would not find the tree all that relaxing as the nets would be out and the chase on.

For curiosity sake I decided to record a number of insects that visited the tree during a one hour period in the morning (10.00am-11.00am) of the 4th of January 1983. The results are displayed in the following table.

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>FREQUENCY</u>
LEPIDOPTERA		
Orchard Butterfly	<i>Papilio aegaeus aegaeus</i> Donovan	Few
Capaneus Butterfly	<i>Papilio fuscus capaneus</i> Westwood	Few
Blue Triangle	<i>Graphium sarpedon choredon</i> (C. & R. Felder)	Few
Cornelian	<i>Deudoria epijarbas diovis</i> Hewitson	Many
Double-Spotted Lineblue	<i>Nacaduba biocellata biocellata</i> (C. & R. Felder)	Many
Small purple lineblue	<i>Prosotas dubiosa dubiosa</i> (Semper)	Many
	<i>Theclinesthes miskini miskini</i> (T.P. Lucas)	Few
Small green-banded blue	<i>Danis hymetus taygetus</i> (C. & R. Felder)	Many
Tailed Emperor	<i>Polyura pyrrhus sempronius</i> (Fabricius)	Few
Australian Crow	<i>Euploena core corina</i> (W.S. Macleay)	Few
Northern Jezabel	<i>Delias argenthona argenthona</i> (Fabricius)	Few
Lemon Migrant	<i>Catopsilia pomona pomona</i> (Fabricius)	Few
Caper White	<i>Anaphaeis java tentonia</i>	Few
HYMENOPTERA		
Hatchet Wasps	<i>Evania</i> spp.	Many
Cuckoo Wasps	<i>Stilbum</i> spp.	Few
	<i>Holochrysis</i> spp.	Many
Bees	Colletidae	Few
	Halictidae	Few
	Anthophoridae	Few
	Apidae	Many
Ants	<i>Myrmecia</i> sp.	Many
	<i>Creumatogaster</i> sp.	Many
Microwasps	Proctotrupoidea	Few
	Chalcidoidea	Many
COLEOPTERA		
Christmas beetle	<i>Anoplognathus</i> spp.	Few
Fiddler Beetle	<i>Eupoecila australasiae</i> (Donovan)	Many

A number of other insects were sighted but not recorded. Many Diptera (mainly Syrphidae) visited the tree but these were not captured to be identified as were a number of other insects that seemed to be using the top of the tree as a half way house along their flight path.

In summary the tree itself is a thing of beauty and when viewed with its active insect fauna exhibits a special fascination to the interested entomologist ie. a good excuse to sit and look into space for hours on end.

NEWS FROM THE NMV

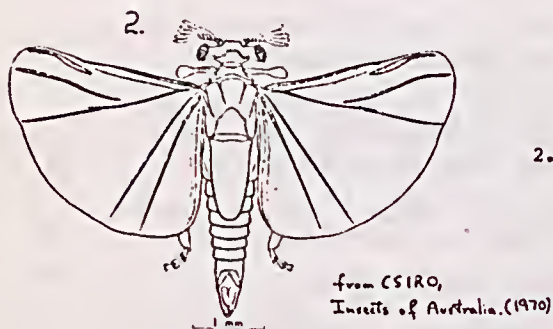
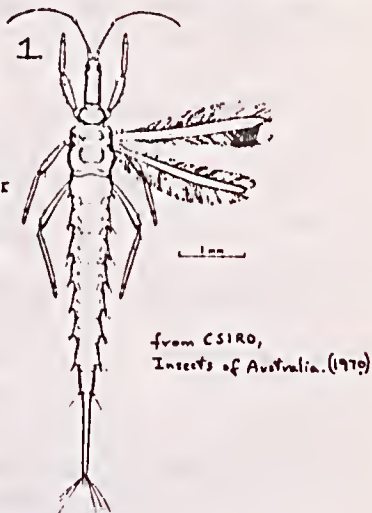
The months of December and January have brought many visitors to our department in particular overseas visitors. Some of these visitors have been: Drs H. Kitano, N. Katayama and Y. Koshida all of the Department of Biology, Tokyo Gakugei University, Koganei-Shi, Japan; Mr N. Hikita, Mr M. Ikeda, Mr S. Kuwahata, all from Tokyo, Japan; Dr S. Chullasorn, Department of Biology, Ramkhamhaing University, Bangkok, Thailand; Dr M. Yorsef, Department of Zoology, J.P.T. University, Hungary; Dr H. Duffies, Instituut in Tax. Zoologie, Amsterdam; Dr and Mrs Z. Boucek, attached to the Department of Entomology, British Museum, London; and Dr and Mrs D. Cowley, Department of Zoology, University of Auckland. We also had a visit from an interstate member of the society, Mr Allen Sundholm of Sydney, NSW.

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OF VICTORIA

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Each issue of this volume will contain diagrams of insects for you to identify. Some are designed for the beginner and others for the "expert". Answers will be in the following issue.

1. Name the Order. Small insect reaching a maximum length of 12mm. Insects of this order are often found in flowers and occur in large numbers. They have piercing mouthparts to extract the juices of plant cells. These insects are most easily recognised by their fringed wings.



2. Name the Order. Adults of these insects are free living but part of their larval stage and pupal stage is parasitic particularly on Homoptera (Bugs). Adults are distinguished by their strange antennae and berry-like eyes. They are unique among insects in the absence of a trochanter in the adult leg.

3. Name the genus. This genus of beetle is easily recognised having the prothorax with a broad, median, horn like process which curves over the head. The family characteristics are: Head strongly deflexed and sharply constricted behind eyes; fore coxae elongated, mid coxae ovoid, hind coxae narrowly or widely separated; elytra entire; abdomen with 5 visible sternites, all free; tarsi 5-5-4 segmented, penultimate segment emarginated and lobed beneath.



by D.F. Crosby

The article by Allan Sundholm in the December 1983 issue of this journal was an interesting, provocative and timely contribution and I congratulate him for it. However, I feel that some comments should be made and I submit them for further discussion.

COLLECTIONS

I agree that private collections should end up in institutions, where they can be properly maintained and available for study. The recently introduced tax concessions should encourage this. But do the institutions want them? Do they have the funds to house and maintain them? As a suggestion, if three acceptable (not all are!) institutions do not want a particular collection, then the owner should be free to dispose of it however he can, including overseas.

EXCHANGES

These should not be interfered with despite the possible interpretation that the specimens belong to the nation.

PERMITS

Permission to collect on any public land may soon have to be obtained as there appears to be a growing disapproval by authorities and the public of indiscriminate collecting on such land. However, I feel that such permission should be readily available for legitimate non-commercial scientific study. Perhaps applications for this permission should be channelled through the entomological societies which could be expected to exercise some degree of control over members.

AVAILABILITY OF DATA

The free availability of location data will always be a problem due to fears of potential overcollecting damage from commercial or greedy collectors. The Societies can help here by influencing members against such practices. However, as it may be impossible to eliminate these practices, secrecy will continue and Mr Sundholm's proposals would appear idealistic. But certainly let us try to achieve them.

NUMBERS

Every collector should limit the numbers of specimens he takes. Most probably do. I do not believe that it is possible to apply a blanked maximum because this ignores variability and distribution. A species which is variable or one which has wide distribution could require a relatively large series to study adequately. Surely we need distributional data backed by specimens for positive identification and do not want to discourage further exploration when a nominal maximum has been caught? The proposal may also deter revisiting old areas to see if they are still viable or need conservation.

HABITATS

Habitat preservation is really the major issue. The Societies should be active in this area at all times.

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<u>Hon. Editor</u>	- K. Walker, National Museum of Victoria 71 Victoria Crescent, Abbotsford 3067 Telephone 419 5200 (NMV), 481 2043 (home)
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<u>Past President</u>	- David Stewart, 3 Vale St., West Rosebud Telephone - (059) 86 2705
<u>Councillors</u>	- Mesdames Joy Burns, Mary Le Souëf, Dorothy Johnson, Messrs David Crosby, R. Field, A. Yen, K. Dunn.

DIARY OF COMING EVENTS

February 18th	- Instruction Session, Dr T. New
March 18th	- Council Meeting
April 15th	- The World of Ants, K. Walker

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VOL. 13 NO. 2



APRIL 1983

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are :

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 P.M. on the second last Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S)
Student, Associate.....	5.00 (Aust)	" 5.75 "

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE GENERAL MEETING, 18 FEBRUARY 1983

The President, Mr P. Kelly, chaired the meeting which commenced at 8.05pm.

Apologies: D. & J. Holmes, A. Yen

Present: G. & J. Burns, P. Carwardine, K. & E. Clark, D. Crosby, K. & L. Dunn, R. & J. Field, S. Johnson, M. Le Souëf, C. & C. McQueen, T. New, S. Smith, D. & N. Stewart, P. Tussak, R. Vargi, K. Walker.

Minutes of the December general meeting were received (D. Crosby/G. Burns)

Correspondence: Received (M. Le Souëf/D. Stewart)

P. Kelly offered congratulations to Kelvyn Dunn on passing his matriculation exams and on gaining entry to a Science course at the Australian National University.

Treasurer's Report: Deferred.

Editor's Report: K. Walker requested notes and articles for forthcoming issues of the Victorian Entomologist.

General Business and Exhibits:

- (1) A painting of Virachola butterflies by Andrew Atkins, donated for the Zoo Le Souëf memorial appeal, was exhibited.
- (2) Peter Carwardine showed a copy of the recently published book 'An Introduction to the Moths of Southeast Asia'.
- (3) P. Carwardine also showed eggs of the Notodontid moth Danima banksiae Lew., recently obtained from captive stock, and invited members to attempt rearing this species.
- (4) L. & K. Dunn. A demonstration of the use of a home computer for recording butterfly distributional data, as an aid to the ENTRECS scheme. Much of the Le Souëf collection, as well as other data, has been programmed and examples were given of production of locality lists for particular species, segregated by state. Maps with a resolution of 10' could be produced. D. Crosby and M. Hunting also commented on ENTRECS progress.
- (5) M. Le Souëf informed members of the recent transfer of the Le Souëf collection to the ANIC, Canberra.
- (6) Several members contributed to a brief discussion on incidences of butterflies over the current season.

- (7) S. Johnson. (a) Ogyris abrota Westwood and attendant Crematogaster ant.
(b) Ants and a large carabid beetle from nests of O. genoveva.

P. Kelly then introduced the speaker for the evening, Dr T.R. New to give a general instruction session on 'Life Histories and early stages of insects'. He later thanked the speaker.

The meeting closed at 9.50pm.

EDITORIAL

Recent articles in the Victorian Entomologist have raised the question of 'How many specimens should be taken by collectors?'. Clearly restraint is needed, especially for rare or local species, in order to ensure their survival in the wild - and even common species need not be taken in large numbers except for a few (very few) genuine scientific investigations aimed at increasing our understanding of the species population fluctuations with the long term object of adequately conserving them.

From time to time, collectors may take long series of rarer species, either for greed, for monetary gain, or just through irresponsibility. Such practices must be strongly discouraged, and are clearly against the spirit which our Society tries to engender. Although overcollecting is not yet a prime factor leading to extinction of species, marginal species are likely to suffer considerably as a result, and there is considerable potential for elimination of local populations. Breeding habitats must be conserved for such species, and the Society regards wanton destruction of such habitats as both unnecessary and immoral. Natural disasters such as our recent fires and droughts do enough damage without ourselves adding the coup de grâce.

In general, the Society's policy on collecting is that no member should take more specimens than actually needed for his/her personal collection (usually meaning a small series, perhaps only of pairs from particular localities), that worn specimens (especially females) should be released unharmed, and that care should be taken to ensure that adequate breeding populations are left in any locality.

WANTED: Copy of Victorian Entomologist October 1972 and any copies of Wings and Stings. Peter Carwardine 509 0622 (work)
211 8958 (home).

A RECORD OF AUDIBLE PUPAL STRIDULATION FOR A SPECIES OF THE GENUS HYPOCHRYSOPS
C. & R. Felder (LEPIDOPTERA: LYCAENIDAE)

by K.L. Dunn
16 Grace Avenue, Dandenong, Vic.

Pupae of a number of lycaenidae including Oqyris genoveva Hewitson, O. amaryllis Hewitson, O. oroetes Hewitson, O. zozine Hewitson, O. olane Hewitson, O. abrota Westwood, Jalmenus evagorus (Donovan), J. ictinus Hewitson, Archopala centavurus (Fabricius), Zizina labradus (Godart) and Theclinestes onycha (Hewitson), have been noted to emit a rasping "click" or "tick" if disturbed or artificially stimulated (Common and Waterhouse, 1981). In the case of T. onycha and J. evagorus the sounds produced were found to be inaudible to the human ear and required amplification to be detected (C. & W. 1981).

During December 1982, a selection of Hypochrysops delicia delos (Waterhouse and Lyell) pupae were taken from borer holes under the bark of Acacia melanoxylon near Dandenong. (V.) By gently blowing across the pupae and lightly tapping the container in which the pupae were stored, an audible rapid and repeated chirping sound was emitted by several of the pupae. It was observed that fresh pupae appeared unable to stridulate and that the sound was most frequent in mature pupae, within hours of emergence.

The vibration produced by H. delicia delos pupae appeared more similar to that produced by Oqyris abrota than to O. olane and O. amaryllis meridionalis (hopensis Burns). Like O. abrota, pauses between individual "chirps" made by H. delicia, once stridulation had begun, were barely noticeable. In contrast longer pauses were recorded between the "brps" of O. olane (from Bordertown S. Aust) and O. amaryllis.

Stridulation occurs naturally, especially following an increase in external temperature. However, more often stridulation is artificially induced by an external stimulus such as physical contact. Pupae are encouraged to stridulate most readily by contact with ones fingers, but this practice is unwise as many lycaenid pupae, particularly Oqyris are very sensitive and the underlying tissue is easily ruptured by even slight pressure. Stridulation is not induced by noise, light or smell (Hoegh-Guldberg, 1972).

REFERENCES

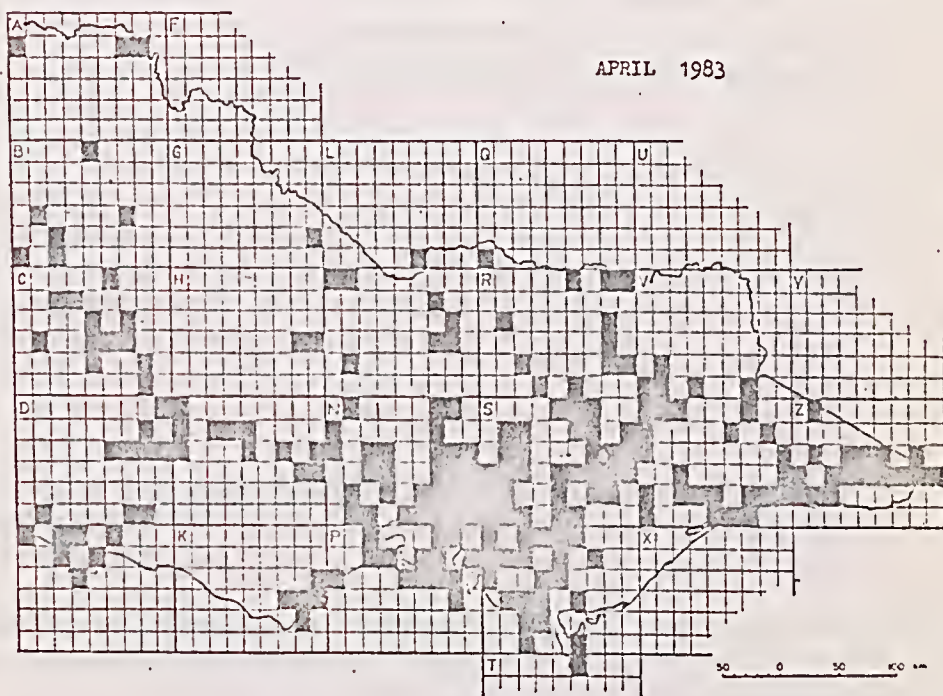
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Second Edition Angus and Robertson, Melbourne, 682 pp.

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Angus and Robertson, Melbourne, 498 pp.

Hoegh-Guldberg, O. (1972). - Pupal sound Production of Some Lycaenidae.
J. Res. Lepid 10: 127-147.

ENTRECS MAP

The following map has been compiled from the collection data available to the ENTRECS co-ordinators and shows the areas of Victoria that collectors have visited. It will be useful for members planning future field work to try and visit areas not yet collected to provide data for the blank squares.



A VISIT TO THE GUANGZHOU INSTITUTE OF ENTOMOLOGY

Alan Yen

71 Victoria Crescent, Abbotsford Victoria 3067

While holidaying in China last January, I was fortunate enough to be able to arrange half a day at the Guangzhou (Canton) Institute of Entomology. The Institute is adjacent to the Sun Yat Sen University, and they interchange staff and students with the university. It is located south of the Pearl River in the newer section of Guangzhou, but like many places in China, it was very difficult to find.

There are two entomological institutes in China. The Chuangzhou Institute controls entomological work in the south of the country, and the larger Shanghai Institute looks after the north. Some of the universities also carry out entomological work.

The Guangzhou Institute is housed in one main building. It has about 180 staff (research and ancillary), and some live in the flats associated with the complex.

Not surprisingly, nearly all of the work at the Institute is applied. The research is mainly concerned with the biological control of food plant pests, termites, and soil insects. The use of chemical insecticides is very intense in parts of China, but the Institute is reducing this usage by the introduction of biological control. There is a programme of integrated control which required close liason between the Institute entomologists and the farmers. This farmer participation is essential in a country like China because agriculture is so intensive and extensive, that the available entomologists cannot hope to be able to monitor insect pests by themselves.

The Institute prides itself on the development of an artificial egg for the egg parasite Trichogramma to oviposit in. This eliminates the need for Heliothus eggs to build up supplies of Trichogramma for release.

There is a large insect collection in the Institute, and like most places in the tropics and subtropics, conservation of the collection is a major task.

The Institute is poorly equipped compared to similar institutions in Australia, but has slowly begun to import modern equipment. The staff also have problems in maintaining constant temperature conditions for insect cultures. Despite these problems the entomologists at the Institute have achieved impressive results.

Some of the staff at the Institute have either toured or worked in Australia, and several Australians have spent time at the Institute.

The time that I spent at the Guangzhou Institute of Entomology was extremely interesting and rewarding. I could not ascertain whether there are amateur entomologists in China, but I doubt if many participate in this activity because of the difficulty they would have in obtaining entomological equipment. Unfortunately the weather was unsuitable for collecting so I have no specimens to describe.

AN INLAND DISTRIBUTION RECORD FOR OGYRIS ABROTA WESTWOOD IN VICTORIA
(LEPIDOPTERA: LYCAENIDAE)

by Kelyvn Dunn

Burgmann College, Australian National University,
P.O. Box 1345 CANBERRA CITY A.C.T.

On 5 February 1983, Stephen S. Johnson and I investigated an area 2 km south-east of Harcourt (near Bendigo) in central Victoria for the presence of Ogyris spp. This locality, adjacent to the Calder Highway, appeared a particularly promising habitat for the species O. abrota and/or O. amaryllis Hewitson, as their larval host Muellerina eucalyptoides was noted growing profusely on the trunks and branches of Eucalyptus.

No images of either species were to be found, however a systematic search under the bark below the adventitious roots of the mistletoe produced several empty Ogyris pupal cases. These pupal remains were generally discovered near colonies of Crematogaster ants; the usual attendant ant of Ogyris abrota.

The prothoracic plates of the pupal cases were noted to be devoid of any distinctive darker markings. I have observed that this feature separates pupae of O. abrota from O. olane Hewitson and O. amaryllis. O. olane and O. amaryllis are in contrast characterised by the presence of dark brown "eye-brow"-like markings on the prothoracic plates.

Considering the larval host, the probable attendant ant and the distinctive prothoracic region of the pupa, the pupal shells taken, therefore, undoubtedly belong to the species O. abrota. Marcourt, thus represents a central Victorian locality for this lycaenid.

A female pupal shell collected by Johnson is preserved for reference in the author's collection.

MISSING MEMBERS

Would anyone knowing the present address of the following members please inform the editor at his address on the book cover.

Mr A.D. Bishop - formerly of the Zoology Department
University of NSW Kensington

Mr Clyde Wild - formerly of Orsam St., Wynnynm Qld.

News at the National Museum of Victoria

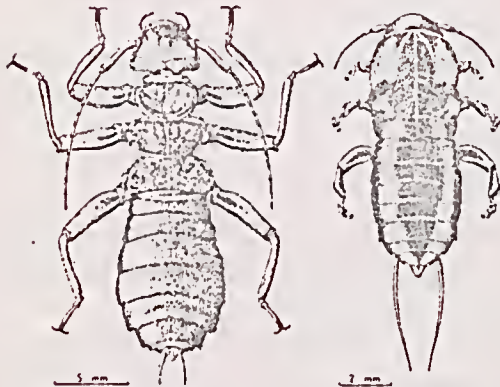
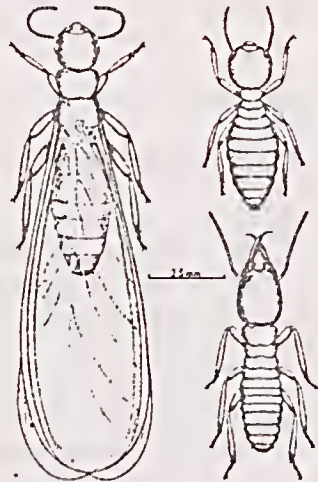
The influx of visitors to the department following the Christmas break has finally begun to abate although the number of time consuming odds and sods jobs within the department seems to be on the increase. Visitors recently in the department have included Dr E. Munroe from Ontario, Canada (Pyralidae), Dr J. Pasteels, Brussels University, Belgium (Isoptera), Dr Ebbe Schmidt Nielsen, CSIRO, Canberra (Lepidoptera) and Drs J. Lawrence and Doyen (Tenebrionidae).

Dr A. Neboiss conducted a three day field trip to the Gippsland area but due to the extreme dry conditions did not prove to be very successful. Mr Ken Walker has been collecting for bees in suburbs of Melbourne. The dry conditions, if anything, suit bee collecting as the results have proven. An interesting find is a possible new species taken on a Eucalypt tree outside Clunies Ross House, Parkville. Ken also visited the South Australian Museum in March to bring back a large bee collection on a long term loan.

SUBSCRIPTIONS ARE NOW DUE

Answers to Vol. 13 no. 1: (1) Thysanoptera. (2) Strepsiptera. (3) Mecynotarsus albellus Pasc. (Anthicidae: Colcoptera). Perhaps the first 'Increase Your Knowledge' was too easy and didn't cause members to ask questions or look up books so try your knowledge on these:

1. Name the order. These insects are closely related to the cockroaches and found living in highly organised social units. Within each species four distinct castes are recognisable each caste with structural and biological modifications to perform specific duties. In 1970 the Australian fauna was estimated at 182 species.



2. Name the Order. Insects in this Order favour damp, confined spaces and although nocturnal are attracted to lights. The representatives figured are associated with bats in Malaya, Indonesia and the Philippines. They either live on the bats, or frequent their roosts, but are not necessarily parasitic. The cerci in this Order are modified into terminal forceps and their form in the insects figured is uncharacteristic of the group. (Note: They are not Psocoptera or Phthiraptera)

3. Luminescence in insects is not an uncommon feature. In many cases it is due to the presence of bacteria although self-bioluminescence occurs in Collembola, Homoptera, larval Diptera and in a number of families of Coleoptera. The light production reaction is very efficient with some 98% of the energy involved being released as light.

The main constituent of the chemical reaction is Luciferin and light is produced as a result of:

- (a) Putting a candle in the window
- (b) An oxidation reaction
- (c) An enzymatic reaction
- (d) A reduction reaction

MINUTES OF THE COUNCIL MEETING, 18 MARCH, 1983

The meeting, chaired by the President, opened at 8.05pm.

Apologies: R. Condrón, R. Field, K. Walker

Attendance: G. & J. Burns, P. Carwardine, D. Crosby, D. Johnson, M. Le Souëf, T.R. New, D. Stewart, A.L. Yen

Minutes of the last Council meeting were passed: G. Burns/M. Le Souëf

Correspondence: Received: D. Stewart/G. Burns

Treasurer's Report: The Secretary reported that current credit balances were \$1258.15 (including \$495 in the Le Souëf Memorial Fund), \$1000.00 in the investment account and \$280.63, publications account. There are 16 financial members at present; 64 financial members were registered at the end of 1981. Subscriptions are now due for 1983.

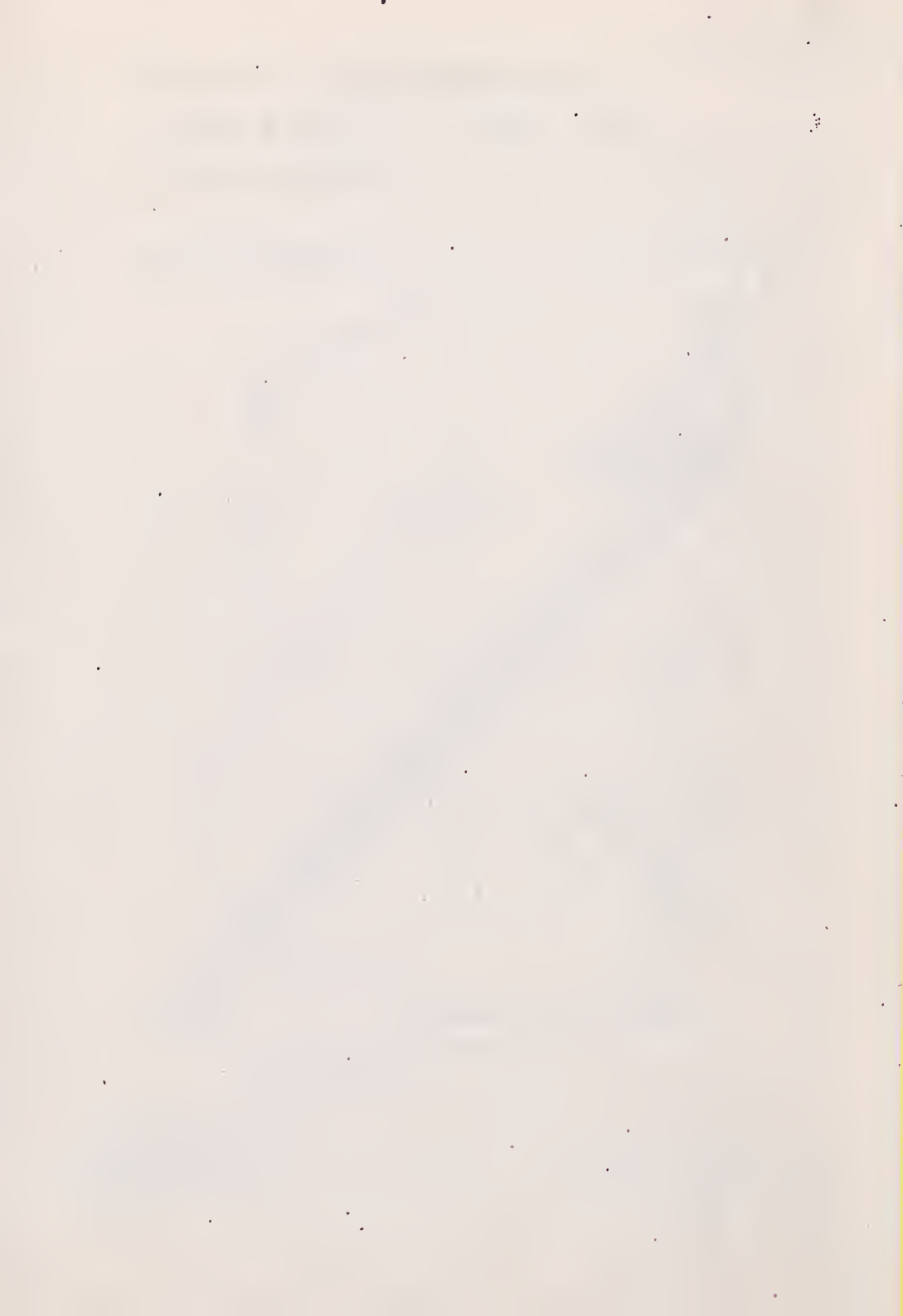
Zoo Le Souëf Memorial Fund. Considerable discussion was held over the final arrangements for administering the fund. As general guidelines:

- (i) An award is to be made to an amateur entomologist in Australia, not necessarily in Victoria.
- (ii) He or she should have contributed to entomological knowledge and/or given encouragement to other amateurs in the spirit of the Society's objectives.
- (iii) The award may be made to a person of any age, and can be made at unspecified intervals.
- (iv) Nominations may be made informally to any member of the Council at any time. Such should include some information on why the nominator considers his/her nominee a worthy recipient.
- (v) A small subcommittee of Council will consider all nominations and advise Council of its recommendation. The present subcommittee comprises the President and immediate Past President (both ex officers), D.F. Crosby and T.R. New.
- (vi) An award may be made up to the amount of interest accumulated on the principal of the Memorial Fund since the award was last made.

A painting, donated by Andrew Atkins, is to be raffled within the Society for the Memorial Fund. It depicts a pair of Virachola smilis dalyensis Le Souëf and Tindale and is valued by the artist at approximately \$200. Tickets (\$1 each) will be on sale to members from the next meeting and the draw will take place later this year.

Programme: Tentative programme arrangements for the remainder of 1983 were discussed.

The meeting closed at 10.05 pm.



Checklist and Bibliography of the Australian Caddis-Flies (Trichoptera)

Arturs Neboiss



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DIARY OF COMING EVENTS

- April 15th - The World of Ants, K. Walker
- May 20th - Council Meeting
- June 17th - Annual General Meeting

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VOL. 13 NO. 3



JUNE 1983

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 pm on the third Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S.)
Student, Associate.....	5.00 (Aust)	" 5.75 (U.S.)

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

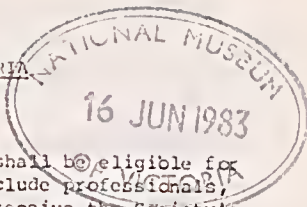
CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.



MINUTES OF THE GENERAL MEETING, 15 APRIL 1933

The President opened the meeting at 8.10 pm

Apologies: R. Condron, D. Crosby, A. Yen

Present: G. & J. Burns, P. Carwardine, K. Clark, R. & J. Field, D. Holmes, M. Hunting, M. Le Souëf, T.R. New, D. & M. Stewart, R. Vargi.

Minutes: As printed versions of the minutes were not available, the minutes of the last general meeting and council meeting were read to the meeting. Accepted: P. Carwardine/R. Field.

Correspondence: Received (D. Stewart/ R. Field)

Treasurer's Report: Deferred. Discussion was held on the Society's finances: 1) the meeting unanimously approved setting up a separate interest-bearing account for the Le Souëf Memorial Fund (M. Hunting/D. Stewart). 2) there may be need for a deputy treasurer to function in the absence of the Treasurer.

Editor's Report: K. Walker reported that the April journal was late because of lack of articles and, again, appealed to members for notes, observations and general articles for forthcoming issues.

General Business: 1. The meeting discussed the guidelines proposed for operating the Zoc Le Souëf Memorial Fund. The following changes and additions were passed by the meeting:
iv. 'Nominations may be made in writing to any member of the Council at any time...'
vii. (Add) No more than one award will be made in each Calendar year.
viii. (Add) As a condition of award, the recipient shall be asked to contribute an account of his/her entomological experiences to the Victorian Entomologist.

The revised guidelines were adopted (P. Carwardine/R. Field) Council was also requested to examine the possibility of providing a certificate or medallion in addition to the main award, and to examine methods of advertising the award.

2. The Secretary informed the meeting of the proposed raffle of Andrew Atkin's painting.

Exhibits and observations:

1. P. Carwardine i. larvae of the Banksia moth, *Danima banksiae*. ii. Eggs, and a larva of the giant silk moth *Coscinocera hercules*. Privet is a useful foodplant, readily accepted by the larvae.
2. K. Walker Two boxes of ants, to illustrate his talk.
3. M. Hunting A preliminary map of ENTRECS site, showing that many parts of Victoria are undercollected for butterflies.
4. T.R. New Comments on the very short synchronised flight of *Fraus* swift moths.
5. M. Le Souëf Late females of *Heteronympha merope* were attracted to growing grapes, and had frequently been found on nets covering vines and bunches.

The President introduced Mr Ken Walker, to talk on 'Ants of the world and the world of Ants'. After answering many questions, the speaker was thanked by the President.

The meeting closed at 10 pm.

SUBSCRIPTIONS ARE NOW DUE

You are unfinancial, if a red spot appears here. Please send your remittance to the Treasurer.

HONORARY TREASURER'S REPORT

Statement of receipts and expenditure year ended 31st Dec. 1982

Receipts

	\$
Credit balance brought forward	407.74
Bank Interest General A/C	29.09
Term Interest	125.00
Subscriptions	585.00
Ex-Subs Journal Sales	35.00
Advertising	60.00
Donations 'Zoo' Memorial Fund	255.00
Term Investment	<u>1000.00</u>
	2496.83
Publications Equipment Fund Inc. Interest	<u>280.63</u>
Total	2777.46

Expenditure

Journal Production, Photocopying, etc.	263.97
Postage	93.01
Projector Use	30.00
Postal Registration	20.00
Donation Nat. Heart Foundation	50.00
Xmas Supper Expenses	10.03
Credit Balance General A/C	1029.82
Term Investment	<u>1000.00</u>
	2496.83
Publications Equipment Fund Inc. Interest	<u>280.63</u>
Total	2777.46

Hon. Auditor as before: Kevin Ross, Chartered Accountant

THE WORLD OF ANTS AND ANTS OF THE WORLD

by

K.L. Walker

INTRODUCTION

Ants are truly fascinating creatures. A single ant left on its own is a puny, insignificant creature; yet put back with its community of other ants and it takes part in a remarkable range of activities and complex behaviour patterns and is part of the most formidable task force that the insect world can muster. The sheer numbers of ants alone is a staggering figure. It has been estimated that at any moment in time there are about 100 thousand, million, million ants alive and active throughout the world, and when one considers that every one of those ants has a specific duty to perform and all are regimented with complete devotion to their colony, they really could be the masters of the earth one day!

There are about 20,000 different species of ants throughout the world and Australia's piece of this cake is about 4,000.

Ants are grouped with the bees and wasps in an order called Hymenoptera and they are one of the most advanced groups of this order. What groups of insects the ants arose from and when this development occurred cannot be answered accurately. The oldest known fossil of an ant is from the Cretaceous period about 100 million years ago and the next is from the Eocene period about 50 million years ago. The ant that was found in this later fossil has very close relatives living today and they are found only in Australia. This is the ant *Mothomyrmecia macrops* that occurs in Western Australia and South Australia and is sure to be found in Victoria one day. The evidence suggests that ants arose about 100 million years ago from a group of wasps called the Tiphiidae and females of this group of wasps are wingless.

STRUCTURE

Ants conform to the typical structure of a generalised insect. Their body is divided into three sections. The head, the thorax and the abdomen but they differ from all other insects by having their antennae elbowed and this is the result of the elongation of one segment of the antennae and they possess a petiole or node on the waist.

There are very few insects where you will find all stages of their life cycle living together and when this is found, it indicates that those insects have a social behaviour which may range from solely protection of the younger stages to a complex system of protecting and feeding of the young stages, the building and maintenance of a shelter for these young which involves the entire community to achieve these results.

The ants are recognised as being the most or amongst the best examples of insects which have a highly developed social behaviour, the term for which is called a truly eusocial behaviour and the aspect that identifies a highly developed eusocial behaviour is the occurrence of a division of labour amongst the community. For this division of labour to be structured and constructive there needs to be a central administrator and an older, experienced generation to show the younger generation what to do. With the ant colonies the central administrator is the queen and experience is passed by having overlapping generations. Within the insect world very few progeny ever know their parents and such a situation is only found in highly social insects.

DIVISION OF LABOUR

The division of labour within a colony separates the individuals into what is known as castes. Each caste has its own special set of activities and their bodies are adapted to best performing these tasks. Therefore the colony has a reproductive caste consisting of the queen and king, there is a soldier caste whose individuals usually have large jaws and since the large jaws need larger muscles to move them efficiently the entire head is generally enlarged. Below these are the various forms of workers ranging from large headed to small headed and all of these different types are usually grouped under the one term of worker caste. Some colonies even have guard ants to block the entrance of the nest.

Of course, its all very well having what might be termed the 'tools of trade' but without a system of communication that controls the use of these tools the entire system is useless. Therefore the ants have developed a very efficient communication system. The exact workings of this system are not well understood but basically it consists of a relay of messages from the queen throughout the colony and a feedback of messages from the colony to the queen.

MESSAGE TRANSMISSION

The transmission of message is done by a number of means the most important being chemical. Ants are continually touching and stroking each other and in doing so are transmitting messages throughout the colony. The queen herself is always surrounded by workers that groom her and she exudes chemicals called pheromones that either directly or indirectly stimulate the activities of the nest. She herself is receiving messages from the colony that govern her egg production of the various castes.

Another means of transmitting messages is by kissing or to put it in a more scientific term trophallaxis. This is where a small drop of liquid is transferred between two individuals. Its evolutionary beginning was most probably simply food transferral but it now acts as a food and message transferral.

Yet another chemical means of message transferral is by laying a scent trail. This is used to guide workers to a food source that scout ants have found. As this chemical trail evaporates quickly it must be continually relaid as the ants have very limited powers of recollection.

The non-chemical minor methods of message transferral include direct observation and sound production. Ants can not actually hear but they sense the vibrations of sound.

NESTING STRUCTURE

The basic format of a nest is a place for everything and everything in its place. The rooms within a nest are called chambers and the connectives between the chambers are called galleries. They have egg, larval and pupal chambers, food storage chambers and the nest entrance may be a single entrance or multi holed around the nest. The nests are either in the ground, in hollow or rotting logs in plants or up in trees formed by mating together leaves.

ANT GUESTS

Insects other than ants are often found inside the nest. This is a very common occurrence and many insects live as "guests" within the nest - these are calledinquilines. More often than not they are bad tennants as they usually feed on the ants stored

food or on the ants themselves, particularly the larvae. They are able to remain in the nest untroubled by initially, hiding usually among the eggs or larvae, until they acquire the particular smell of the nest after which they are treated by the ants as ants themselves. This shows one of the disadvantages of the ant's heavy reliance on chemicals as a means of recognition.

Beetles would constitute the largest percentage of their tennants and two families of these are Staphyliidae and Pselaphidae.

There is a fly of the hover fly group Syrphidae which lays its eggs at the entrance of a nest and when they hatch crawl down inside and feed on the ant larvae.

While these ants guests are in fact predators of the ants there is along list of ant predators that help keep the population numbers of ants in check.

PREDATORS

The Corroboree Frog which is found around the Sydney area and in the Australian Alps above 1500 metres. These Frogs rely heavily on ants as a major part of their diet. Some lizards feed exclusively on ants. Other predators include Spiders, ant lion larvae, mirid bugs, assassin bugs, parasitic wasps, birds, snakes, flies, worms, fungi and of course other ants.

ECONOMIC VALUE

The Economic importance of ants can be broken up into three main areas: Botanical loss; Nuisance value; and Beneficial.

Botanical loss - This is damage that is done to both the natural environment and to man's efforts of agriculture. Seeds dropping naturally from Australian native plants rarely germinate to produce a plant. They are collected by seed harvester ants before they have a chance to germinate. With regards to mans' efforts, many of the scale and aphids pests only become a problem when in association with ants that protect them from their natural predators.

The nuisance value of ants in contact with man can be either irritating or economic and I'm sure that most have heard of or

experienced the effects of the Argentine ant *Iridomyrmex humilis*. Argentine ants are a voracious and aggressive species of ant that methodically wipe out other species of ants wherever they meet. They are slowly migrating throughout the world and are often called the Imperialistic ant. Another of the home pest ants the hospital ant or Pharaohs ant *Monomorium pharaonis* which has a sweet tooth for stored food products.

Ants that are of a pure nuisance value when in the field or on a picnic or barbecue are many and unfortunately some people develop rather a nasty and painful reaction to the bite or sting of the ants and require medical treatment. Such ants are the Bulldog ants, Jumper ants and the Meat ants.

The beneficial efforts of the ant is something that is not blatantly obvious but is a continuing and essential process. Ants do as good a job and in some places of the world a better job than earthworms in the vertical mixing and aeration of the soil and they assist tremendously with the breakdown of dead organic matter.

ANT SOCIETIES

Leaf Cutters or Fungus Ants

The first are the Leaf Cutter and Fungus Ants that cultivate their own food.

The ants, in colonies up to several million, defoliate any type of vegetation and chew the material into a spongy mass. This is placed in a specially prepared chamber deep inside the nest and inoculated with a specific species of fungus. The saliva that is chewed into the leaf material acts as a growth inhibitor to 'weed' fungi and a growth stimuli to the correct fungus, larvae of the ants are brought down to the fungus culture and allowed to browse on the fungal growth. The leaf cutters have achieved something that few other creatures have done; that is they gather a raw material available in large quantities in order to obtain an end product - food.

Harvester Ants

These ants collect seeds and store them in their chambers deep underground. There is often much size difference of the heads of these ants. The normal size head ants collect the seeds and the

large headed ants crush them with their powerful jaws. It sometimes happened that seeds that are stored get wet and start to germinate. These seeds are then removed from the nest and discarded around the perimeter of the nest. Many of these discarded seeds will continue to grow into seed producing plants from which the ants will collect the seeds. It was once thought that the ants planted the seeds on purpose so as to reap the harvest but the set of circumstances are now known to be accidental. The ants are best described as reapers not sowers.

Farmer Ants or Cow Ants

Farmer ants or more specifically Cow ants is the name given to ants that are associated with aphids. The aphids feed on the sap fluids of plants and always suck up more than they can use. The excess fluid is exuded from tubes at the rear of the aphid and is a sweet sugary solution called honey dew. The ants collect this honey dew from the aphids and can even stimulate the aphids abdomen with their antennae. The ants basically treat the aphids as part of the ant colony by protecting them from natural enemies and some species of ants in cold climates, transfer and aphid eggs into their nests during winter.

Honey Pot Ants

Honey pot ants are a side branch of the Farmer ants and they differ from the normal Farmer ants in that they store excess reserves of honey dew during times of plenty to be used in times of stress. These forms of farmer ants are usually found in dry desert areas where times of stress are a common occurrence.

The honey pot ants mainly obtain their honey dew from the abundant secretions from galls on trees caused by Chalcid wasps although they also attend aphids and scale insects to extract their honey dew.

The so called honey-pot ants are workers of the colony that have been selected to become living vats. They spend their lives hanging from the ceiling of chambers and are force fed with honey dew until their abdomens become huge and swollen.

Social parasite ants survive and thrive by attacking an already established ant colony. They either completely take over the nest or live in conjunction with the other colony.

Those that live in conjunction with another colony are established by a mated young female being accepted by the colony which then tend to her needs and care for the eggs and larvae. This type of system is relatively easy once the foreign queen has acquired the odour of the nest. In this case there is more than one queen in the nest.

The other type of social parasitic ant is where they take over the colony and in time become the sole occupants of the nest. Ants of the genus *Bothriomyrmex* are social parasites of this type and a young mated female sits around the entrance of an established ant colony until she is picked up by a worker and carried into the nest. She remains on the back of the worker for a few days until she acquires the odour of the nest, then finds the nest queen and occupies herself with biting off the head of the colony queen, thus her scientific name *Bothriomyrmex decapitans* is well deserved. Having killed the colony queen she then becomes the sole fertile female in the nest and the workers tend to her as they had their true queen. In time with the nonreplacement of the original workers the nest becomes a *Bothriomyrmex* colony alone.

Slave Makers

Slave making ants are found in Europe and North America. These ants raid established ant colonies, killing and driving off the worker caste and collect from the nest, larvae and pupae of the colony and return them to their own nest. When these pupae emerge they accept their new masters as of their own kind and tend to them as such. Some species of slave making ants have become so dependant on their slaves that they will die of starvation even when placed beside food if their slaves are not there to feed them. These types of slave makers have long, sharp, sickle shaped jaws that are terrible weapons but very poor tools.

The thieves and beggar ants are scavenger ants that to us are the nuisance ants. In nature they sneak into other ant nests and take their stored food supplies. Many such ants now concentrate almost exclusively on thieving from human stored food. Examples of these are the Argentine ant, the Hospital ant and the Black House ant *Technomyrmex albipes*.

SYMBIOSES WITH BUTTERFLIES

I have already discussed the association of ants with aphids and sap sucking bugs in which the ants receive honey dew and the bugs in return receive protection. I have also mentioned that ant nests often have many non-ant guests that in fact feed on the ants themselves.

The ants have another association with a group of insects that combines characters of both previously mentioned associations. Certain ants have a well known symbioses with one family of the butterflies called the Lycaenids. Often ants associate with a specific species of butterfly and so close has this symbioses become that the ant can survive without the butterfly larvae but some butterfly larvae cannot survive without the ant. The association in most cases is very similar to that with the aphid in that the larvae exude a honey dew from paired glands on the seventh abdominal segment and in return the larvae gain protection from predators. It differs from the aphid though in that if the exudates are not removed from some of the butterfly species the larvae will die. The ants tend to butterfly larvae much better than those tending aphids, as the ants house the butterfly larvae inside their nest during the day when their predators and parasites are most active and carry them up to their food sources to feed at night.

There are other lycaenid larvae that live inside the ants nest exclusively and provide the ants with exudates but their food source consists exclusively of ant larvae. The ants accept these butterflies in their larval and pupal stages but will attack them as they would an intruder when the adult butterfly emerges from the pupa. To protect themselves from this attack, as the adult butterfly is escaping from the ant nest, they are covered with a

thick coat of loose white hair which the ants get mouthfuls of rather than being able to bite or sting the adult itself. One such lycaenid is the oak blue *Arhopala wildei* that spends its larval and pupal stages inside the green tree ant nests.

Ants themselves and the societies they form are indeed subjects of great interest. It is hoped that the seminar and this resumé will stimulate members to read about and observe in the field that tiny creature called THE ANT.

BOOK REVIEW

AUSTRALIAN ANIMAL TOXINS. The creatures, their toxins and care of the poisoned patient: Struan K. Sutherland Oxford University Press Melbourne. 1983. 527 pp + 150 illustrations. A\$95.00.

This is an essential text for doctors, veterinary surgeons and paramedics, and contains a great deal of information of interest to pharmacologists, biochemists, zoologists and environmentalists. An attempt has been made to bring together for the first time in the one book details of all Australian land and sea animals which are known to be capable of causing illness to man or animals. This has taken some 10 years to write and has stimulated a great deal of basic research.

Some of the special features of this book include:

- The distribution, diet and habits of many creatures are described in detail, facilitating quick identification.
- Detailed information is provided on the potency, constituents and mode of action of individual venoms.
- The book outlines emergency treatment for bites and stings including specific first aid measures and the selection of antivenoms.

The case histories have been carefully selected to illustrate the various facets of venom action and many of them make fascinating reading. Some of the early snake bite cases are sad tales but these are offset by memorable accounts of snake bites to the male genitalia. Spider bite cases range from a remarkable and honest report by a farmer's wife to descriptions of the horrific syndrome produced by the Sydney Funnel-web spider.

While the detailed discussion of insects is restricted to only 22 pages, a far too short of an account in my opinion, members will find many other sections of great interest to them. There are many useful tips on first aid as well as pointing out the useless and often harmful nature of procedures used in the past.

Due to the price of the book it is not recommended that each member buy a copy, however if one can borrow the book or take out a library loan the time taken to read the book would not be wasted.

CORRIGENDA

The following corrections are provided for papers by W.N. B. Quick appearing in Volume 12, no. 4 'DELIAS ENNIA NIGIDUS MISKIN - ITS HOST PLANT AND SOME EARLY STAGES' and 'Some notes on the Early Stages of the Skipper SABERA DOBBOE AUTOLEON (MISKIN) (HESPERIIDAE: HESPERIINAE)' respectively:

- Page 40, paragraph 3, line 2 should read *Motothixos* not *Notothixox*;

- Page 44, paragraph 1, line 9 should read *Mimene* Joicey & Talbot not *Memene* Joicey & Talbot.

It should be noted that these corrections and the corrigenda noted in Vol. 12 no. 5, page 51 were the result of typographical error on the part of the editor.

NEWS FROM THE MMV

With the cooler weather upon us now time is being spend mounting, labelling and sorting specimens taken on this years field work. Many interesting catches are becoming apparent.

As a precautionary treatment, the Abbotsford building was recently fumigated over the Anzac Day long weekend.

Recent visitors to the Entomology Department have been Dr Sigfried Cymarek, Krefeld, West Germany and Dr D. Howick, CSIRO, Melbourne. A young member of the society, Mr Stephen Johnson, has just completed a two week work experience period with us and hopefully he gained a broader insight into the field of entomology and workings of our department.

AUSTRALIA POST
 AUSTRALIAN ANIMALS (SERIES THREE) STAMP ISSUE

Nine new definitive stamps featuring butterflies will be issued by
 Australia Post on Wednesday 15 June 1983



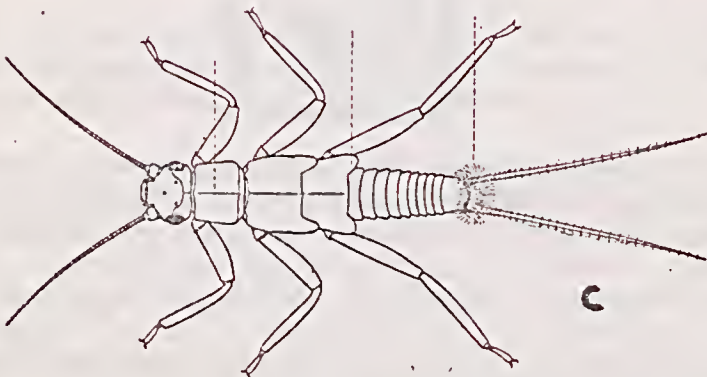
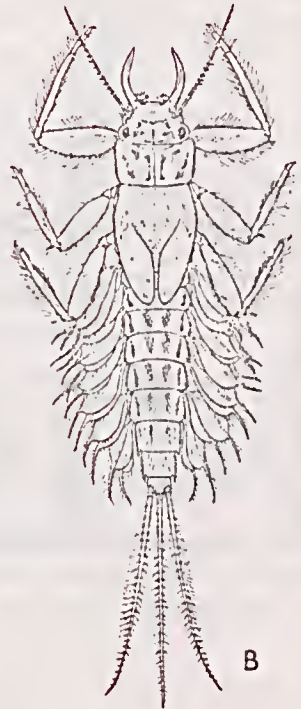
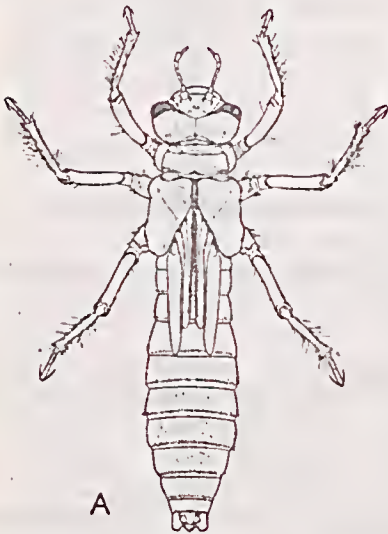
The stamps will be on sale at all offices for approximately
 three years and Philatelic Sales Centres will continue to sell the
 stamps for a further six months after withdrawal from general sale.

A stamp pack containing the nine stamps will sell for \$A4.02.

Two first day cover envelopes will be provided for the stamp
 issue priced at 15 cents each.

Answers to Vol. 13 no. 2: (1) Isoptera (2) Dermaptera (3) b

Name to Order the following three insects. All are aquatic nymphs.



All drawings reproduced from CSIRO 'Insects of Australia'.

The President opened the meeting at 8.05pm.

Apologies: M. Le Souëf, D. Stewart, A.L. Yen

Attendance: G. & J. Burns, P. Carwardine, R. Condron, D. Crosby,
K. Dunn, R. Field, D. Johnson, T.R. New, K. Walker.

Minutes of the previous Council meeting were accepted (D. Crosby/G. Burns).

Correspondence: Received (K. Walker/P. Carwardine)

Treasurer's Report: R. Condron reported that there are at present 22 financial members. Credit balances are: cheque account (+ \$1000 invested) \$1375.82, including \$625 in the Memorial Fund, Publications account \$280.70. Received (D. Crosby/K. Walker).

Editor's Report: K. Walker showed examples of possible format changes to the *Victorian Entomologist*, and requested articles for forthcoming issues. Received (P. Carwardine/K. Dunn).

Memorial Fund

- i. Changes to the guidelines recommended by the general meeting were approved, and the complete guidelines ratified.
- ii. The President put the motion, recorded by D. Crosby: 'That the Society contribute the complete cost of an initial award under the Memorial scheme, in the hope that nominations could shortly be called for'. Passed unanimously.
- iii. Discussion was held over circulation of information about the award. It was agreed that the Subcommittee be asked to prepare a short circular for distribution to Societies and interested bodies in Australia, and that this be done as soon as possible.'

ENTRECS: D. Crosby informed Council that the co-opted Subcommittee (J. Burns, K. Dunn, M. Hunting) was now functional.

Offices: Council's nominations of office-leases for the year 1983-84 were discussed.

General Business:

- i. Membership. Methods of increasing Society Membership were discussed at length. It was agreed that a general publicity brochure' be prepared, for discussion at the next Council meeting. Possibilities of short-term small exhibitions (eg. at local libraries, the Royal Show) and of providing meetings of direct interest to naturalists rather than entomologists should also be considered.
- ii. The Secretary reported that tickets for the painting by Andrew Atkins were selling well.
- iii. R. Condrón queried the state of the Society's library and archival material. The Secretary informed Council that much of this was at present under his care, but little used by members.
- iv. P. Carwardine cited correspondence with an author of recent articles in the Victorian Entomologist, complaining of editorial changes and errors made. The editor agreed to write to the person concerned, enlarging on general editorial policy.
- v. P. Carwardine suggested that excursions for the coming year should be to areas not at presently covered by the ENTRECS scheme.

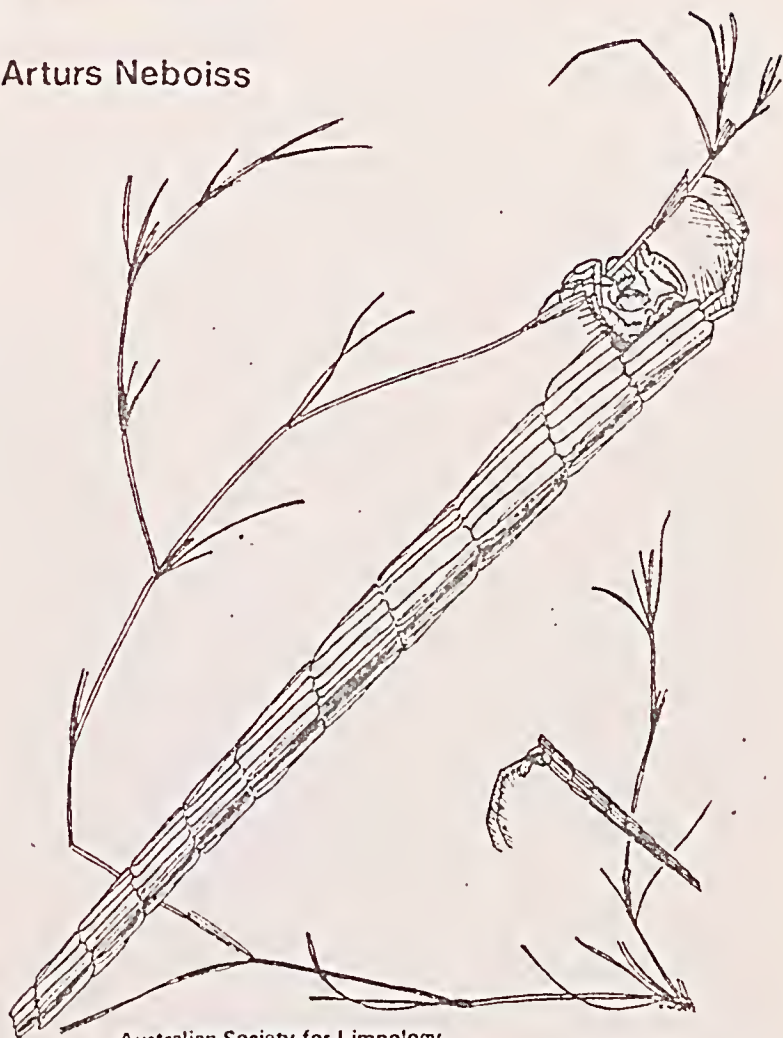
The meeting closed at 10.00 pm.

URGENT REQUEST FOR ARTICLES

The production of the Victorian Entomologist is dependent upon members to supply articles. If each member was to produce a one page article this would be enough to satisfy the page requirements of nine issues. Articles need not be of high powered entomological breakthroughs, just tell us about your collection or field observations from collecting trips. It would be a great bonus to receive articles from our northern members and even more so from our overseas members. Beat the rush and put pen to paper now!!

Checklist and Bibliography of the Australian Caddis - Flies. (Trichoptera)

Arturs Neboiss



Australian Society for Limnology
Special Publication 5

Send Order with payment to:

Mrs Margaret Hart,
Secretary/Treasurer, ASL,
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MULGRAVE VICTORIA
AUSTRALIA 3170

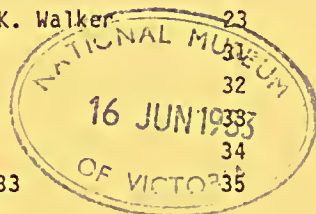
Price: \$5.00 + postage

Postage: Victoria - \$1.00

Interstate - \$1.20

Overseas - \$1.40

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OFFICE BEARERS 1982/1983

President	- Peter Kelly, Lot 6, Dockery's Road, Tallaroak, 3659 Telephone (057)93 8230
Vice-Presidents	- Peter Carwardine, 2a Victoria Rd., Malvern Telephone - 211 8958 - Gordon Burns, 3 Inglis St., Mornington Telephone - 75 7370
Hon. Secretary	- Dr Tim New, Zoology Dept., LaTrobe Univ., Bundoora. Telephone - 718 1007(H) 4792247(uni)
Hon. Treasurer	- R. Condron, 96 Shannon St., Box Hill Nth., 3129 Telephone - 898 6300
Hon. Editor	- K. Walker, National Museum of Victoria 71 Victoria Crescent, Abbotsford 3067 Telephone 419 5200 (NMV), 481 2043 (H)
Excursion Secretary	- Peter Carwardine, 2a Victoria Rd., Malvern 3144 Telephone 211 8958(H) 509 0622(Office Hours)
Past President	- David Stewart, P.O. Box 67, West Rosebud 3940 Telephone - (059) 86 2705
Councillors	- Mesdames Joy Burns, Mary Le Souëf, Dorothy Johnson, Messers David Crosby, R. Field, A. Yen, K. Dunn.

DIARY OF COMING EVENTS

June 17th	- Annual General Meeting
July 15th	- Council Meeting
August 19th	- General Meeting - Speaker yet to be confirmed.

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Ento
P545-205
V645

VOL. 13 No. 4



AUGUST 1983

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 pm on the third Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S.)
Student, Associate.....	5.00 (Aust)	" 5.75 (U.S.)

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

The meeting commenced at 8.07. The President welcomed members, and extended a particular welcome to Mr A.C. Messer, University of Georgia.

Apologies: A. Yen, I. Watkinson

Present:

G. & J. Burns, P. Carwardine, K. Clark, R. Condron, D. Crosby, L. Dunn, R. & J. Field, D. & J. Holmes, M. Hunting, P. Kelly, M. Le Souëf, C. & C. McQueen, A. Messer, T.R. New, D. & H. Stewart, P. Turcsak, R. Vagi, K. Walker.

Minutes of the 1982 ACM were confirmed (D. Stewart/P. Carwardine)

Correspondence: The Secretary detailed incoming correspondence and reminded members the submissions to the Land Conservation Council on the proposed Alpine National Park area are needed soon. Received (D. Holmes/K. Walker)

Treasurer's Report: R. Condron noted that the current credit balance was \$2526.72 (including \$1000 invested and \$815 in the Memorial Fund) and the publication account is \$280 in credit. Received (P. Carwardine/J. Burns)

Editor's Report: K. Walker had nothing particular to report. Material was in hand for the next issue, but articles were needed for future issues.

Excursions: P. Carwardine suggested that excursions during the forthcoming season should aim to record areas not at present covered by ENTRECS.

General Business: 1. The Secretary reminded members that raffle tickets for the memorial fund were still available from him, although selling well.

2. Council had recommended production of a publicity leaflet for the Society - comments for its possible scope were sought as soon as possible.

3. The Secretary raised the suggestion of introducing a differential (lower) subscription for country members who were not able to attend Society meetings. This idea was endorsed unanimously by the meeting, and referred to Council (P. Carwardine/J. Burns)

4. P. Carwardine exhibited:

- i. A copy of Animal Toxins by S. Sutherland
- ii. A copy of 'Zooie's Nature Book' (1933)

5. J. Field: a newspaper article on conservation of the Mission blue butterfly in California.

6. M. Le Souëf informed members of an exhibition of butterflies by D. Holmes in the Dromana Post Office, in connection with the new stamp issue.

7. M. Hunting commented that the field edition of 'Butterflies of Australia' by Common & Waterhouse was on sale at a city bookshop.

8. R. Condron: 2 butterflies from Marlo.

9. T. New showed several sheets of colour photographs of Victorian moths.

10. A. Messer: several large megachilid bees, including a specimen of the world's largest bee, Cnalcidotoma pluto, from Indonesia.

The President, before vacating the chair, thanked members of Council for the help given to him throughout the year.

Election of Offices: resulted in the following results:

President:	P. Carwardine
Vice-Presidents:	D. Johnson, R. Condron
Secretary:	T.R. New
Treasurer:	G. Burns (deputy P. Kelly)
Editor:	K. Walker
Excursions Secretary:	P. Carwardine
Council members:	J. Burns, M. Le Souëf, D. Crosby, L. Dunn, R. Field, M. Hunting, D. Stewart, A. Yen

M. Le Souëf proposed a vote of thanks to P. Kelly for his work as President over the last year. The meeting also noted with appreciation, the considerable amount of work done by R. Condron during his long period as Treasurer.

P. Carwardine then invited P. Kelly to make his Presidential Remarks. These consisted of an annotated slideshow, showing a wide range of beetles and other organisms. After questions, P. Carwardine thanked the speaker.

The Secretary asked members to note the change of date for the next meeting.

The meeting closed at 9.45 pm.

ZOO LE SOUEF MEMORIAL FUND RAFFLE

A painting, donated by Andrew Atkins, depicting a pair of Virachola smilis dalyensis Le Souef and Tindale is currently being raffled within the Society. All takings are going directly into the Zoo Le Souef Memorial Fund.

The painting has been valued by the artist at \$200 and tickets are on sale for just \$1 each. The sale of tickets will close on the night of the December General Meeting (16th December) and the winning ticket will be drawn at this venue. The winning ticket holder, if not present at the meeting will be notified by mail.

BUTTERFLIES OF THE MOUNT BUFFALO NATIONAL PARK, VICTORIA

by

Keivyn L. Dunn, Dept. of Zoology, A.N.U., Canberra, A.C.T.

Mark M. Hunting, 29 Paloma Street, Sth. Oakleigh, Vic.

PREAMBLE

The Mt Buffalo National Park, like many other National Parks in Victoria, has not previously had its lepidopterous fauna systematically catalogued. The composition of this fauna could be predicted based on specimen records from neighbouring alpine and sub-alpine habitats, and spasmodic observations (of varying validity) of the more abundant species within the park boundaries. The National Parks Service, considered it necessary for a survey of insect species to be undertaken in the Mount Buffalo Park. At the request of the Service, the authors surveyed the park during January 1983.

To provide a wider impression of the relevant species distributions, the resources of the ENTRECS scheme, inaugurated by the Entomological Society of Victoria, were utilized.

INTRODUCTION

Mt Buffalo rises steeply from the Ovens River Valley to a plateau of an average altitude of 1400 metres. The Park is situated about fifteen kilometres to the west of Bright and is a popular tourist attraction throughout the year, especially during the winter snow season.

The range of altitudes within the park favours many different plant communities giving rise to such distinct habitats as alpine snow-gum forests, bogs, snow grass plains, and peaks. Many of the butterfly species recorded were observed to be restricted to such specific habitats.

The Horn, aptly named, was of special interest as it is the highest peak in the Park, rising to 1723 metres, and provides an excellent territorial post for the aggregation of adult male butterflies.

Butterflies Recorded at Mt Buffalo

Over twenty species were recorded from the Mt Buffalo plateau. The following list of species is presented from the material presently maintained in the authors' reference collections.

HESPERIIDAE:

<i>Anisynta monticolae</i> (Olliff)	adjacent to slopes
<i>A. dominula</i> (Piotz)	bogs
<i>Signeta flameata</i> (Butler)	adjacent to slopes & creeks
<i>Hesperilla idothea</i> (Miskin)	peaks

PAPILIONIOAE:

<i>Graphium macleayanum</i> (Leach)	peaks
-------------------------------------	-------

PIERIOAE:

<i>Delias aganippe</i> (Donovan)	peaks
<i>Anaphaeis java</i> (Fabricius)	nomadic
<i>Pieris rapae</i> (Linnaeus)	nomadic

NYMPHALIDAE:

<i>Heteronympha solandri</i> Waterhouse	snowgum forest clearings
<i>Argynnis cyrila</i>	
Waterhouse & Lyell	snowgum forest clearings
<i>Geitoneura acantha</i> (Donovan)	adjacent to bogs
<i>G. klugii</i> (Guerin-Meneville)	forest clearings
<i>Oreixenica lathoniella</i> (Westwood)	bogs and plains
<i>O. latialis</i> Waterhouse & Lyell	bogs and plains
<i>O. corraeae</i> (Olliff)	widespread, above about 1200m
<i>Tisiphone abeona</i> (Donovan)	adjacent to watercourse
<i>Vanessa itea</i> (Fabricius)	adjacent to watercourse
<i>V. kershawi</i> (McCoy)	bogs and plains
<i>Junonia villida</i> (Godart)	widespread

LYCAENIOAE

<i>Zizina labradus</i> (Godart)	widespread
<i>Neolucia agricola</i> (Westwood)	plains

Notes of occurrence and distribution

Distribution maps have been produced from specimen label data contained in the ENTRECS scheme. Relevant contributors to this scheme are listed in the acknowledgements.

The distributional data contained in the scheme is still largely incomplete. The material available, does however, provide a basis for future systematic approach to the distribution of Victorian butterflies.

The grids as shown correspond to divisions on the 1: 250,000 used for flora distribution by the National Herbarium of Victoria.

Applying the distribution data available on lepidopterous hostplants, it is expected that many intermediate localities for butterflies will emerge.

Each 1: 250,000 map has been divided into a grid of 54 rectangles numbers 01, 02, 03 etc. from left-to-right and top-to-bottom. The grid reference for Mt Buffalo National Park is thus "YR44" where "Y" represents the state of Victoria and "R" denotes the 1: 250,000 map for Wangaratta.

Notes on species

Victorian distribution maps are provided for eight butterfly species occurring in the National Park.

Anisynta monticolae (Olliff)

The mountain skipper occurs above about 600 metres altitude and favours sunlit rocky slopes where adults may frequently be observed sipping nectar from flowers close to the ground. This species appeared uncommon on the Mt Buffalo plateau this season.

Anisynta dominula drachmophora (Meyrick)

This alpine skipper (restricted to above 1,300 metres in Victoria) is on the wing from late January to the middle of March and was found to be very common locally. The species was most abundant within fifty metres of the National Parks Service office, facing Hospice plain and Crystal Brook. Females dominate, at this locality, in March. The behaviour of this very local species was unusual, being absent from many seemingly identical habitats elsewhere in the park. Considerable variation in the extent of the white markings on the hindwing verso was apparent.

Hesperilla idothea idothea (Miskin)

This subspecies has been recorded from central Victoria to southern Queensland. Males were observed in territorial combat on the Horn at an altitude of about 1600 m. This species was rare at the time of the survey. Another race *H.i. clara* Waterhouse is restricted to the Grampians and isolated localities in South Australia.

Oreixienica latialis theddora Couchman.

The subspecies, *O.l. theddora* of the alpine silver xenica is unique to the Mt Buffalo plateau and flies from late February into March. The species *O. latialis* Waterhouse & Lyell is restricted to above 1000 metres within the state. In the nearby Bongong High Plains, *O. latialis* is represented by the nominotypical subspecies *latialis*.

O. lathoniella herceus Waterhouse & Lyell

The common silver xenica flies with *O.l. theddora* adjacent lake Catani. This common species has a wide distribution in Victoria, recorded from Nelson in the West to Maramingo near Genoa.

O. correae (Olliff)

The correa Brown occurs above 1000 metres in Victoria. On the Mt Buffalo Plateau it is very common in forest clearings, open woodlands and bogs where it may be found frequently settled on alpine flowers and daisies.

Tisiphone abeona albifascia Waterhouse

The occurrence of the Sword Grass Brown was severely restricted this season, probably as a result of the prolonged drought. Although not an abundant insect in the Mt Buffalo park, specimens may be encountered wherever the larval host *Gahnia* sp. grows.

Another race *T.a. antoni* Tindale, occurs in the Grampians and Portland distinct in Victoria.

Delias aganippe (Donovan)

Males of the Wood White are most conspicuous on hilltops often flying with *G. macleayanum*. Both species were observed exhibiting territorial behaviour on the summit of the Horn. The larval food-plant is probably the root parasite *Exocarpos cupressiformis* (Native Cherry) which grows on the lower slopes of the plateau.

ACKNOWLEDGMENTS

1. Mr Rocky Barca and Mr Bob Adams - Rangers for National Parks Service, Victoria.
2. Mr David Crosby, Convenor of ENTRECS Programme Entomological Society of Victoria.
3. The following other contributors to ENTRECS: W.N.B. Quick, A.F. Atkins, the late J.C. Le Souëf, A. Bishop, A. Kinsella, S. McEvey.

REFERENCES

All taxa are in accordance with:

Common, I.F.B. & Waterhouse, O.F., 1981. Butterflies of Australia Angus & Robertson, Revised edition.

**An Additional Note on Theclinestes miskini miskini (T.P. Lucas)
(Lepidoptera: Lycaenidae) from the You Yangs, Victoria.**

by K.L. Dunn

Dept. of Zoology, Australian National University,
Canberra, A.C.T.

Theclinestes miskini miskini has been recorded from Flinder's Peak in the You Yangs Forest Park, Victoria (Dunn, 1982). Several adults were also observed and a single male was taken at this locality by D.F. Crosby, on 31 December 1976. This earlier capture, confirms the presence of this lycaenid species in the You Yangs. The specimen is held in the D.F. Crosby Collection.

Acknowledgments

David Crosby: for notifying me of, and providing information on this additional capture.

Reference

Dunn, K.L. 1982, Notes on, and an Important Extension to the Distribution of Theclinestes miskini miskini (T.P. Lucas) (Lepidoptera: Lycaenidae) Victorian Ent. 12(5): 53-55.

IMPORTANT NOTICE

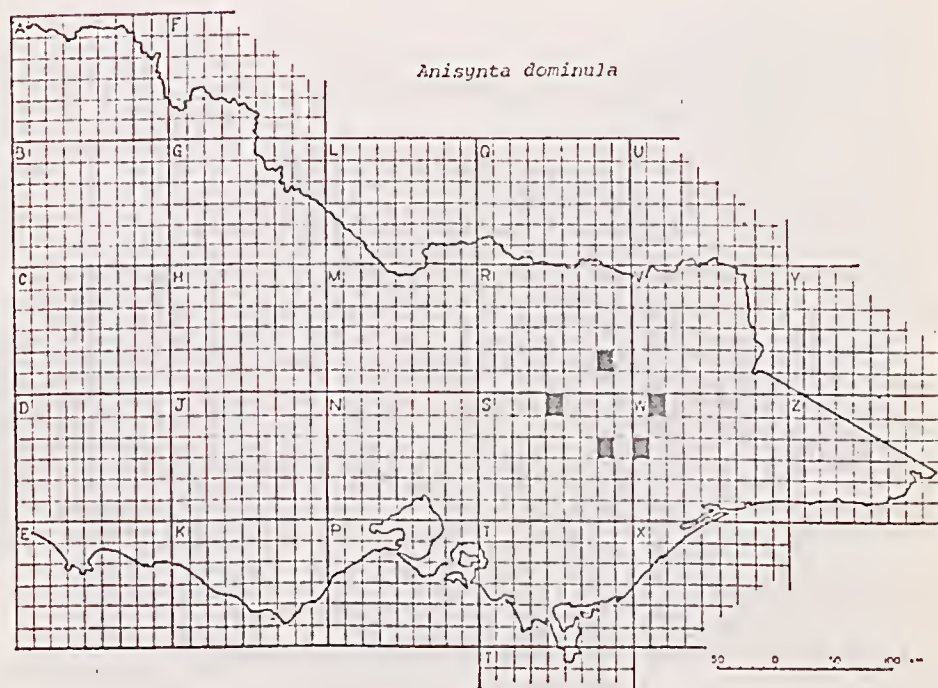
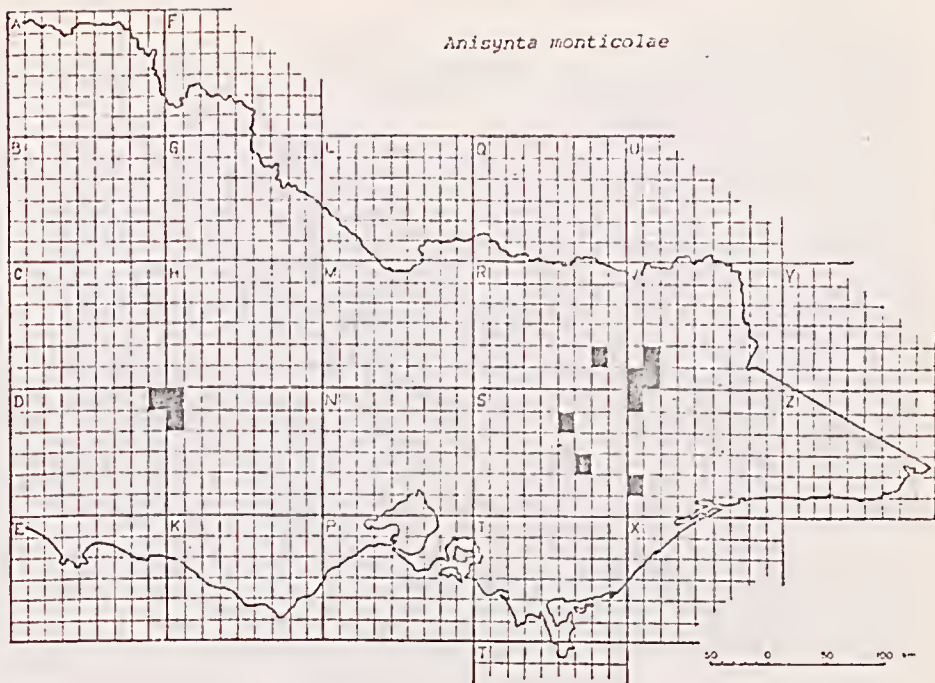
Change of date: August Meeting

From August 19 to Wednesday evening August 17, t 8.15 pm

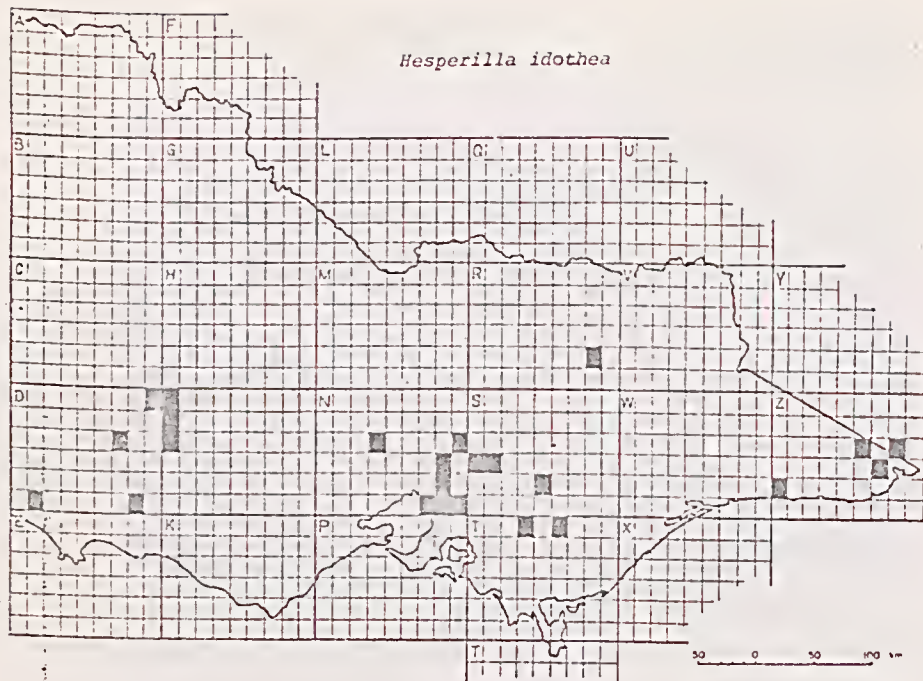
Speaker: Prof. Lincoln P. Brower, University of Florida

Topic: 'Strategies for colonising a continent: The Monarch Butterfly'.

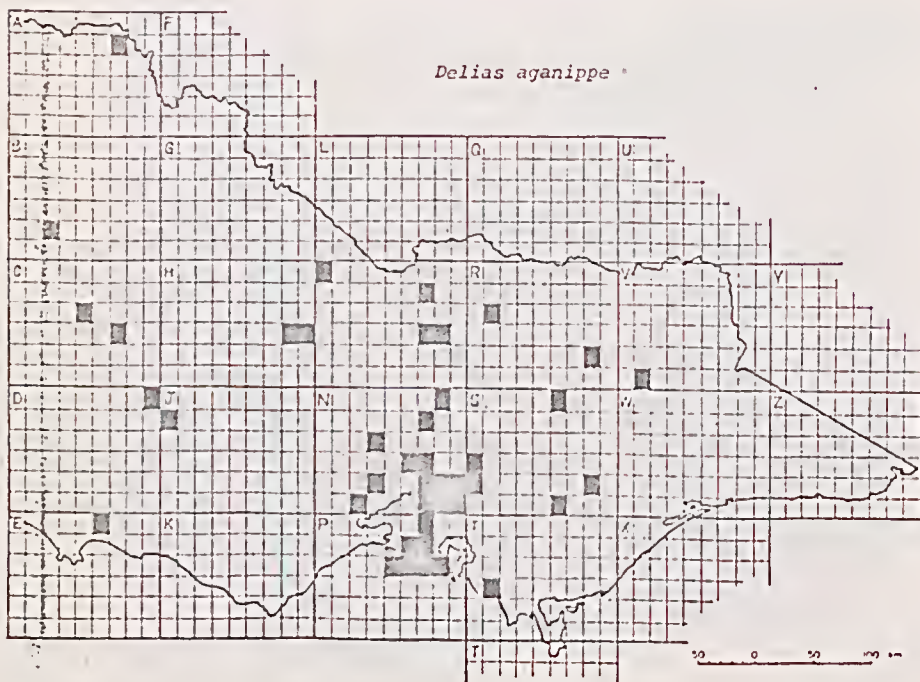
Accompanied by a film on the life-history of the Monarch Butterfly.

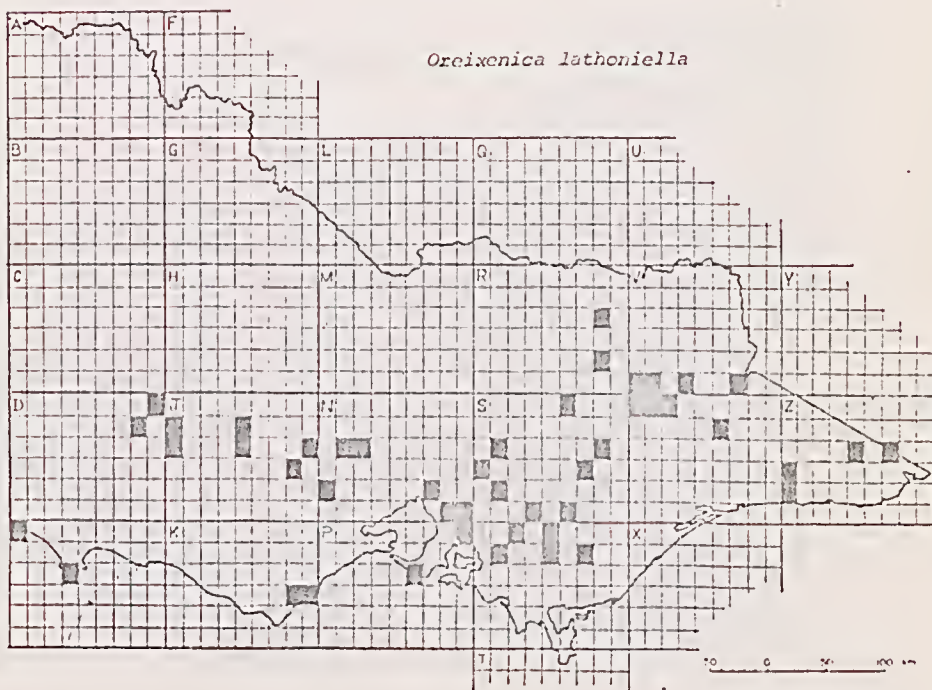
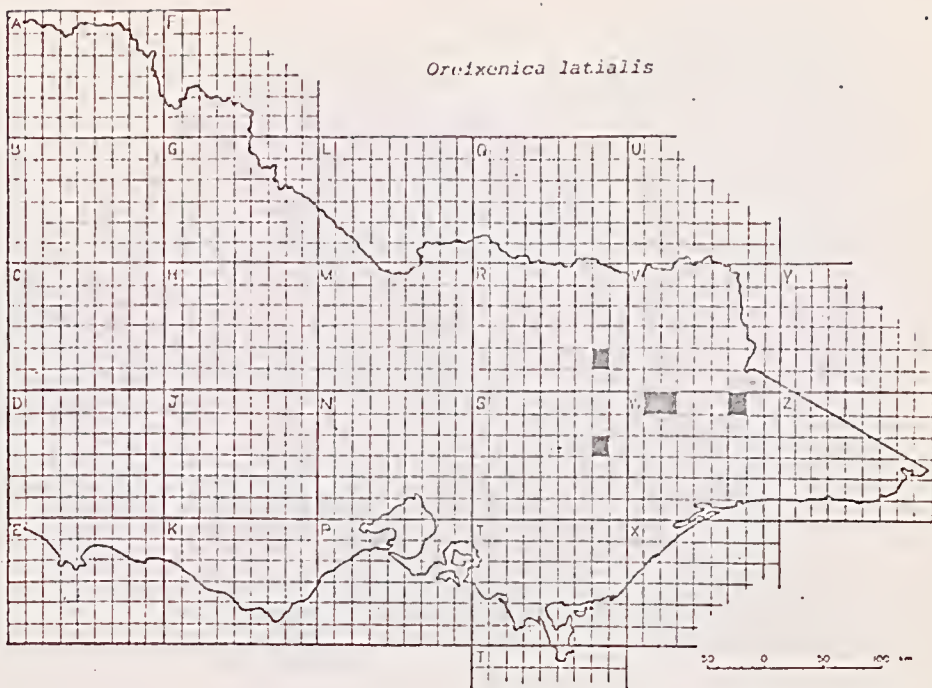


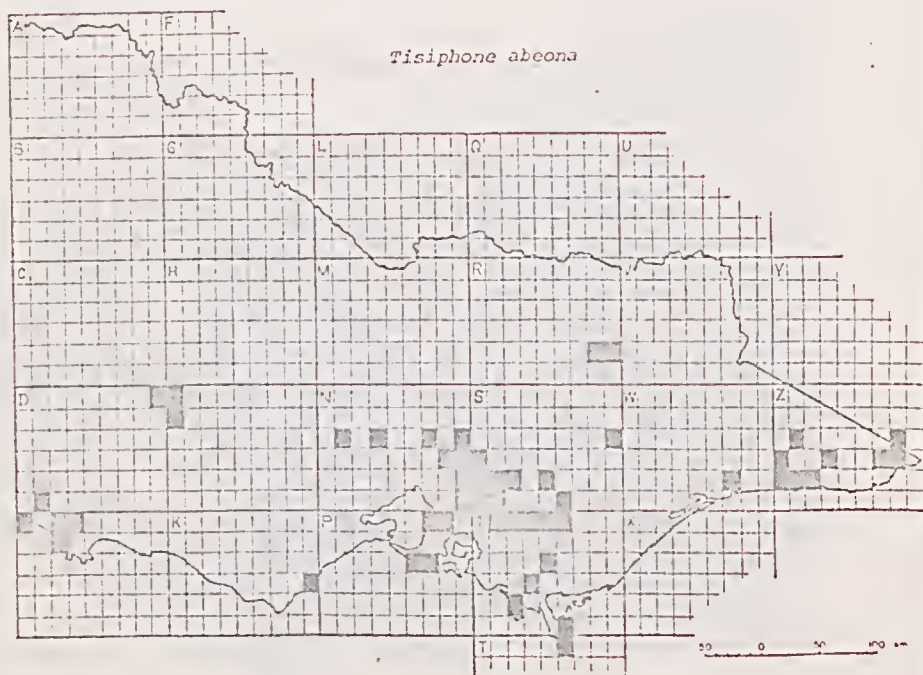
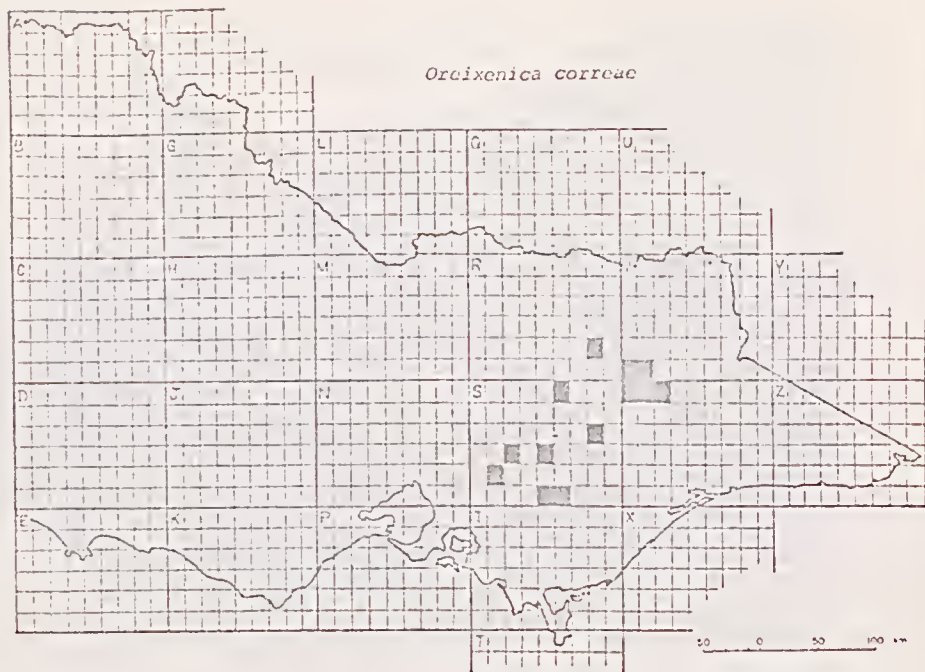
Hesperilla idothea



Delias aganippe







GEORGE LYELL 1866-1951 - by Miss E. Matheson

George Lyell was born at Ararat, Victoria on July 25, 1866. He was 22 years old before the capture of a Caper White Butterfly at Albert Park turned his attention seriously to insect collecting, and as a consequence he joined and became an enthusiastic member of the Field Naturalists Club of Victoria. Two years later he moved to Gisborne, Victoria, and except for collecting excursions to many parts of Australia, resided there until his death.

He built up an enormous collection of butterflies and moths, all meticulously labelled and named, which he later presented to the National Museum of Victoria. He began transferring his collection to the Museum in 1932 when he himself had 500 cabinet drawers filled with specimens, at the same time he offered to amalgamate the Museum collection with his own.

The enormity of this self imposed task was shown by a census of the collection in 1938, which listed 48,468 specimens representing 5315 species, all Australian, hundreds of which had to be relaxed and reset. Mr Lyell continued to add to the collection and at the time of his death it contained 11,721 butterflies and 39,495 moths, totalling 51,216 specimens, representing 6,177 species and most important of all 534 type specimens. This magnificent collection still remains the major part of the lepidoptera collection in the National Museum of Victoria.

George Lyell wrote several scientific articles dealing with butterflies and other insects most of these were published in the Victorian Naturalist between 1890 and 1929. At the same time he was writing similar articles in collaboration with C.A. Waterhouse - these also were published in the Victorian Naturalist. The most notable result of this collaboration was the publication of their book in 1914, The Butterflies of Australia which was the first comprehensive work on this subject up until that time. It was a valuable reference book for almost twenty years. He died on May 19, 1951.

The President, P. Carwardine, opened the meeting at 8.05 pm.

Apologies: L. Dunn, R. Field, D. Johnson, M. Le Souëf

Attendance: G. & J. Burns, R. Condrón, D. Crosby, M. Hunting,
P. Kelly, T. New, D. Stewart, K. Walker, A. Yen

Minutes of the May Council Meeting passed. (K. Walker/D. Crosby)

Correspondence: The Secretary itemised correspondence received and sent since the last meeting.

Treasurer's Report: In presenting his first report as Treasurer, G. Burns paid tribute to the work of R. Condrón, who had occupied this position for the last 16 years.

Credit balances: General Account \$995.29,
Publications Fund \$291.13
Investment Account \$1000
Memorial Fund \$917

After some discussion, it was proposed to discontinue the separate publications account (G. Burns/P. Kelly), and to amalgamate this with the general account. Carried.

Editor's Report: K. Walker noted the articles were in hand for 1-2 issues, but that more are needed for later in the year. Discussion was held on the possibility of producing a simplified 'News Sheet' at times when available material was insufficient to produce an issue of the Journal. It was agreed that production of a Journal is highly desirable but that a News Sheet could, from time to time, be a worthwhile reminder to members that their participation in writing articles is needed.

Country Members: Following a recommendation from the AGM, Council discussed the possibility of offering reduced subscriptions to members who could not, by reason of distance, regularly attend

meetings. The motion 'That the annual subscription to individual members residing within Australia but beyond 100 km from the Melbourne GPO be reduced to \$8, with effect from 1 January 1984 was proposed (P. Kelly/J. Burns), and carried.

Publicity Leaflet: J. Burns showed a 'mock-up' of a small advertising poster for the Society. This was enthusiastically received, and discussion on amendments and printing costs followed. Distribution of the leaflet was discussed.

Royal Show: After lengthy discussion, it was decided not to proceed with a suggestion of exhibiting at the Show, because of logistic difficulties.

The motion 'That the Society should not exhibit at the Show, but should expose the possibility of having advertising leaflets distributed from a central stand; these to be based on J. Burns poster with small amendments (suggested)' (T. New/P. Kelly) was approved.

Possibility of smaller exhibits, in conjunction with Societies, should be explored.

Programme for Forthcoming Year

The following tentative programme was outlined:

August:	Prof. L. Brower
October:	A. Yen/J. Blyth 'Work of the Survey Department of the Museum'
December:	Members night: call for exhibits
February:	Workshop on rearing techniques
April:	K. Walker: Parasitic wasps

Memorial Fund

The Secretary outlined publicity measures in hand: It was decided that the raffle for Andrew Atkins' painting should be drawn at the December meeting.

Field Trips

Brief discussion was held on possible sites for field excursions over the next season.

The meeting closed at 10.15 pm.

Checklist and Bibliography of the Australian Caddis-Flies (Trichoptera)

Arturs Neboiss



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OFFICE BEARERS 1983/1984

President	- Peter Carwardine, 2a Victoria Road, Malvern Telephone - 211 8958
Vice-Presidents	- D. Johnson, 7 Eranimil Drive, Mt Eliza Telephone - (03) 787 3013 - R. Condron, 96 Shannon St., Box Hill Nth Telephone - 898 6300
Hon. Secretary	- Dr Tim Hew, Zoology Dept., LaTrobe Uni., Bundoora Telephone - 718 1007 (H), 479 2247 (Uni)
Hon. Treasurer	- Gordon Burns, 3 Inglis St., Mornington Telephone - 75 7370
Hon. Editor	- Ken Walker, Museum of Victoria, 71 Victoria Crescent, Abbotsford 3067 Telephone - 419 5200 (MV) 481 2043 (H)
Excursion Secretary	- Peter Carwardine, 2a Victoria Rd., Malvern
Past President	- Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659 Telephone - (057) 93 8230
Councillors	- Mesdames Joy Burns, Mary Le Souëf, Messers David Crosby, L. Dunn, Ross Fields, D. Stewart, A. Yen

DIARY OF COMING EVENTS

August 17th	- Prof. L. Bower (Note Date)
September 16th	- Council Meeting
October 21st	- A. Yen & J. Blyth - 'Work of the Survey Department of the Museum'

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Ento
p 595-705
V645

VOL. 13 No. 5.



OCTOBER 1983

VICTORIAN ENTOMOLOGIST



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as a periodical Category B
Price \$1.

Journal of
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MINUTES OF THE GENERAL MEETING, 17 AUGUST 1983

The President, P.Carwardine, chaired the meeting which opened at 8.20 pm and welcomed members and visitors.

Attendance: M. Braby, L.P. Brower, G. & J. Burns, K. & E. Clark, D. Crosby, P. Daniell, L. Dunn, J. Edgar, R. & J. Field, D. & J. Holmes, M. Hunting, D. Johnson, S. Johnson, P. Kelly, M. Le Souëf, T. & D. New, T. Owen, D. & N. Stewart, K. Walker, P. Williams.

Minutes of the Apr general meeting received (D. Stewart/D. Crosby)

Correspondence: The Secretary detailed recently-received correspondence, and commented on impending changes for meetings.

Treasurer's Report: G. Burns reported that the Publications fund has now been amalgamated with the general account. Credit balances are: general account \$1356.52; investment account \$1000.00; memorial fund \$917.00. There are 53 financial members. Received (P. Kelly/ R. Field).

Editor's Report: K. Walker requested articles for forthcoming issues.

Excursions: P. Carwardine outlined plans for possible excursions to the Castlemaine area (?Nov 27) and the Lorne area (?Feb).

General Business: 1. Council's recommendation that the subscription for 'country members' be \$8 was ratified (K. Walker/ D. Stewart).

2. The Secretary reported that it had been decided not to proceed with a Society exhibit at the Royal Show. The publicity leaflet designed by Joy Burns was exhibited.

3. Tickets are still available for the Memorial Fund Raffle.

- Notes and Exhibits:
1. M. Le Souëf conveyed greetings from R. & N. Manskie, M. & B. Moulds and G. Daniels.
 2. The Secretary commented briefly on the release of the State Conservation Strategy Discussion Paper.
 3. D. Holmes exhibited (a) a synoptic collection of Victorian butterflies, (b) a case of birdwing butterflies.
 4. The President (a) an article on the ANIC in a recent issue of 'Hemisphere' (b) photographs of the collection of Norma Harrison.

The President then introduced Dr Lincoln Brower, distinguished Professor of Zoology at the University of Florida and well-known for his work on butterfly biology and invited him to address the meeting. Dr Brower's excellently-illustrated talk on the biology of the Monarch Butterfly was followed by a film, and both were enthusiastically received. After Dr Brower had answered many questions, a vote of thanks was proposed by D. Crosby.

The meeting closed at 10.20 pm.

Collection of Mrs Norma Harrison, Harrisons Road, Stanhope

I have always had an interest in nature and her small creatures as well as the large. My husband Jim shares my interest, and we fostered the same interest in our three children. Around 1970 we built a cabinet to house the specimens we had accumulated. We holidayed at Coffs Harbour during the May school holidays of 1972, 73 and 74, and were able to net a quantity of local species.

Our cabinet, which is 6ft. by 2 ft. has been full for several years now, so I haven't been netting anything other than *Danus plexippus*, which I have been tagging for the Sydney Museum. Even this has been very slow over the last couple of seasons.

The summer of 1973/74 was quite unusually tropical and we were able to capture three specimens of *Papilio aegeus aegeus*, which we had never seen here before, and sighted a *Polyura pyrrhus sempronius* heading in a south westerly direction. There was also a very large migration of *Anaphaeis java teutonika* going in the same direction in that season.

My knowledge of technical names is not very wide and early recording not very detailed. However, if any members of the Society would like to visit the area, they are welcome to view my collection and collect on our property.

BUTTERFLIES OF THE KOKODA TRAIL PAPUA NEW GUINEA

by

Mark M. Hunting, 29 Paloma Street, Sth. Oakleigh, Vic.

INTRODUCTION

The Kokoda Trail contorts across 100. kilometres of virgin tropical rainforest in a north-easterly direction from Ower's Corner near Port Moresby to Kokoda in the Northern Province of Papua New Guinea.

It was during World War II that Australian troops engaged in bitter fighting with the Japanese forces along the Kokoda Trail. The Japanese were finally expelled upon their retreat to the northern beaches at Buna and Gona.

Between the 8th and 17th May 1983 I crossed the Trail with a trekking party of seven. Nothing can compare with the experience of sweat, saturation, fatigue and finally triumph in walking for ten days across one of the world's most challenging trails.

Butterflies Along the Trail

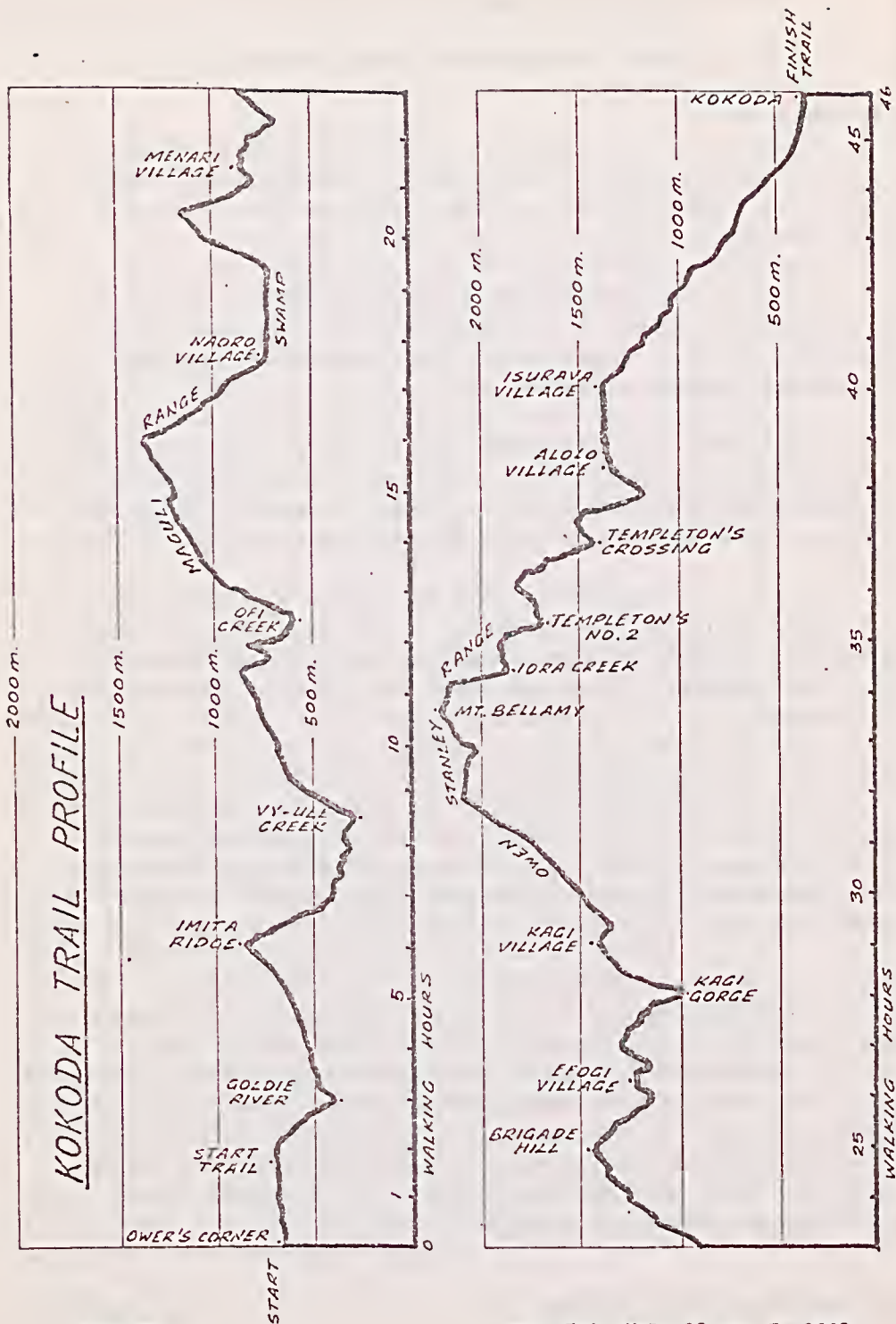
During frequent rest periods, or lunch breaks when the prevailing feeling of utter exhaustion was given time to wane, opportunities were taken to swish the net and sample the butterflies.

Day 1 (0.0 hours to 8.5 hours)

Some of the first opportunities I had during the first day were between Imita Ridge and Vy-Ule Creek where I collected *Taenaris olonaus*, *Eurema candida*, *Tellervo zoilus*, *Danaus philene* and the Delias-like *Cepora abnormis* among others under the green rainforest canopy, or where shafts of sunlight brightened the clearings.

Day 2 (8.5 hours to 12.5 hours)

On the following day we reached Ofi Creek shortly after noon, and as this was to be our day's destination and camp site, we all took the opportunity to bathe our aches and wash our clothes in the creek. Many butterflies were attracted to our clothes which were spread out over the rocks to dry; the most prolific being *Appias celestina*, *Graphium macfarlanei*, *Danaus* sp. and many small lycaenids. Near our camp-site clearing were *Papilio ambrax*, *Vindula arsinoe* and *Danaus schenki*.



Day 3 (12.5 hours to 18.0 hours)

The Maguli Range proved too exhausting in both ascent and descent for much collecting. This section of the Trail was very steep and overgrown. Many false crests emerged to dash one's hopes before the summit was finally realized. On the steep descent to Naoro village a painful knee ligament plummeted my spirits to an all-time low.

Day 4 (18.0 hours to 21.5 hours)

Beyond Naoro village was a swampy valley in jungle where the Trail crossed numerous waterways. Some interesting species such as *Pistoria nigropunctata*, *Hypolimnas antilope* and *Euploea* sp. inhabit this region. I would have liked to spend more time here in spite of the mosquitoes and muggy heat.

The next point of interest came just before Menari village where we all jived about under a bubbly waterfall. Here I collected *Hypochrysops polycletus* and *Cyrestis acilia*.

Day 5 (21.5 hours to 26.5 hours)

The Efogi villagers were the most westernized nationals encountered, probably due to the close contact that is maintained with the outside world at Port Moresby via the airstrip, even if it was graded at 1 in 8! *Papilio aegeus* was common in all villages due to the presence of many old citrus trees.

Day 6 (26.5 hours to 29.0 hours)

Beyond Efogi we stopped for lunch and a swim at Kagi Gorge (elevation 1000 metres). It was here that my best collecting so far was made. *Graphium weiskei* was first seen here along with *Candalides grandissima*, *Hypochrysops pythias* and more *Danis* sp. which were partial to "Explorer" socks spread out to dry in the sun.

Day 7-8 (29.0 hours to 35.5 hours)

From Kagi village the Owen Stanley Range with Mt Bellamy loomed through the clouds to the north. This range was over 2000 metres in elevation and comprised beautiful mossy alpine forests with pandanus palm and spanish moss hanging in the canopy. The forest floor was relatively open and the air for the first time was noticeably chilling on sweaty skin.

Here was the habitat of many beautiful *Delfias* including *D. bornemanii*, *D. microsticha* and *D. thompsoni*, and many fine lycaenids including *Calliclita cyara*.

Day 9 (35.5 hours to 40.0 hours)

On the descent to Templeton's Crossing we passed several gaping pits beside the narrow trail. These fox-holes were the silent reminders of savage close-range fighting nearly forty years ago. Typical sites for these fox-holes were either wedged between the flanged roots of strangler figs, or into the sides of embankments overlooking a straight approach.

For the first time in three days the water of Iora Creek at Templeton's Crossing was warm enough to immerse oneself completely. *Blue Papilio ulysses* flashed against the dark forest backdrop and *Graphium weiskei* was last seen here making nervous visits to drink from the damp sands at the bank of the creek. I also collected *Celastrina drucei* and more *Danis* sp.

Day 10 (40.0 hours to 46.0 hours)

On the final day of trekking we stopped for lunch beside a shady stream just over one hour's walk from our destination at Kokoda. The jungle was noticeably lusher as the northern slopes of the Owen Stanleys are subjected to a higher rainfall than the southern slopes.

Some of the butterflies collected here await identification, but *Papilio ulysses* frequently settled on the sandy stream banks while *Ornithoptera* sp. soared overhead. Between the two I collected *Pachlioptera polydorus*, *Euploea eurianassa*, *Danaus schenkii*, *Pepliphorus inops* and more *Taenaris* sp.

It was long-awaited relief when we finally tramped into Kokoda for a rest day to wash and clean our belongings. Next morning, on the lawns near the rest house it was "business as usual" and *Hypolimnas missipus*, *Taenaris bioculatus* and *Pantroporia consimilis* were collected. In particular *Eurema hecabe* was extremely abundant. *Troides oblongomaculatus* was a magnificent sight, soaring around the tree tops at Kokoda and later, on the red-flowering shrubs near the foreshore at Buna.

It paid to leave towels behind at Port Moresby and travel light. For the full ten days I trekked in one wet T-shirt, pair of shorts, pair of socks and two pair of jocks! (one pair chafed to pieces by the time I reached Naoro!) Each night after a wash, a duplicate set of dry shorts, underwear, T-shirt and thongs was a comfort. Solid boots were essential, as were the Rossi "Falcons" which served me well. For back-packs the larger the pack, the heavier it can get! However, comfort and the ability to adjust the weight between the hips and shoulders are prime considerations.

Reference

All names, whether or not current taxa are quoted from:

B. D'Abrera: "Butterflies of the Australian Region"
Lansdowne Melbourne 1971.

The Kuranda (Occasional) Chronicle

It is with the greatest regret that I have to advise that there will, other than in retrospect, be no further additions to these proposed notes.

The property, now at long last brought to the standards of equipment, habitability, and, outdoors, to the freedom from alien weeds towards which goal I have striven so hard, has proved too much for me to maintain. The closest one could get to a private mini-National Park, and habitat of so many wondrous insects, birds and mammals - and not a few reptiles - "Thundering Creek" has been placed on the market.

To those many visitors from north, south and west, and from overseas, who have from time to time called in, I would like to reiterate how much I have enjoyed their company. To those friends and acquaintances from nearer at hand I express the same thoughts, but mingled with some degree of envy.

It had been my sincere hope that the hand of fate would bestow on one or other of our members the elusive six numbers of Tattsлото ('Goldлото' up here, as 'Tatts' has the ring of a lottery, and such unholy proceedings are frowned upon), and that this hidden jewel of Blackmountain Road would stay 'in the club', in the forlorn hope that I might one day re-visit these haunts with all their memories. Regrettably this seems an unlikely event.

Nigel Quick

A STUDY OF LEPIDOPTERA OF THE MANNING RIVER DISTRICT NSW

Mrs J. Brown, Cundletown, NSW

A total of 79 species of Lepidoptera have been noted over a period of three and a half years in the same locales. Regular observation has been carried out in an area comprising river bank and country around Cundletown, (5 km north of Taree), also Mt George; West of Taree, Lansdowne (12 kms N-W) and Old Bar and Salivater, coastal area, about 20 kms S of Taree.

All aspects of the lives of various species have been watched with interest. The regular time of their appearances, daily and seasonally, territorial defence of their area, mating, egg-laying, growth of larvae and feeding habits of larvae and butterflies. A program of breeding several species from eggs collected when females have been seen laying has been carried out.

Most have been regulars, coming about the same time each year, a few sighted only once or twice. These seem to appear mostly at times after the North-Easterlys have been blowing.

Two mass flights have been seen at Cundletown, in my garden. On December 2nd 1979, a stream of *Anaphaeis java teutonia* passed over, all flying from SE to NW, in groups of 10-40, males and females and lasted about 1 hour from 4pm to 5pm. On February 1st 1980, *Catopsilia pomona* (form *crocale*) flew over, from 9am to 10.30am in groups of 5-10, travelling SE to NW. These were mostly males.

Those species bred from egg to adult include:

Danaus plexippus and *Danaus chrysippus patilia* (Wild Cotton)
Hypolimnas bolina nerina (Paddy's lucerne & Joyweed)
Graphium sarpedon choredon (Camphor laurel)
Cephrenes angiaades sperthias (Bangalow Palm)
Vanessa itea (Nettles)
Vanessa kershawi (Capeweed)
Junonia villida calybe (Plantain)
Papilio aegaeus and *P. anactus* (Citrus)
Catopsilia pomona (form *crocale*) (*Cassia fistula*)
Polyura pyrrhus sempronius (*Caesalpinia* - Thorny Acacia)
Cephanodes kingii (Bee Moth - Gardenia)

Reference Books

Burns & Rotherham: "Australian Butterflies"
Charles McCubbin: "Australian Butterflies"
Common & Waterhouse: "Butterflies of Australia"

HESPERIIDAE

T.s. symonius											x	
T. eliena										x		
T. peron								x	x			x
T.r. rietmanni								x	x			
O.f. flavovittata				x	x	x		x				
O.W. sothis								x	x			
T.a. ancilla											x	
C.a. sperthias	x	x	x	x	x							x
S. tymbophora										x		
O.W. hypochloris										x		

PAPILIONIDAE

P. aegeus	x	x	x	x	x				x		x	
P. anactus	x	x	x	x					x	x		x
P.d. stheneleus*			x								x	
P.aegeus("Beatrix")											x	
G.s. choredon	x	x	x					x	x	x		
G.e. lycaon		x	x						x			
G.m. macleayana									x	x	x	x
P.l. leosthenes*											x	
C.c. cressida										x	x	

PIERIDAE

P. rapae	x	x	x	x	x	x	x	x	x	x	x	x
E. phcebus				x	x	x	x	x	x			
E. herla				x	x							
E. smilax				x	x					x		
A.j. teutonia		x			x	x				x	x	x
A.p. ega	x	x	x		x						x	x
C. p. scyllara			x	x	x	x	x				x	x
E. angulipennis		x	x	x	x	x	x		x			
E. parthia	x										x	x
C.p. pomona	x	x			x				x			
C.p.pomona(Crocale)x	x	x	x	x	x							
c. p. crokera			x			x		x				
c. gorgophone	x	x	x									
D. nigrina			x	x	x	x		x	x	x		
D. nysa nysa		x		x							x	x
D.a. argenthona				x	x	x						
D. aganippe*	x										x	

NYMPHALIDAE

D. plexippus	x		x	x	x	x	x		x			x
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SPECIES	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
D.c. petilia	x		x		x		x	x	x			
D.a. affinus	x	x		x	x							
D.h. hamata	x	x		x	x						x	
E.c. corinna	x	x	x	x	x	x			x			
A.a. andromacha	x		x	x	x					x		
H.m. merope			x	x						x	x	x
G.a. acantha			x									
T.a. aurelia*				x							x	
H. pseudiris									x			
H. meterius				x				x	x	x		
H.a. adiante	x								x			
X.a. arctoa											x	
M.l. bankia				x	x							
P.p. sempronius	x		x	x	x						x	x
V. itea			x	x		x		x	x		x	
V. kershawi					x		x	x	x	x	x	
J.v. calybe	x	x	x	x	x	x			x	x		
H. missippus*		x			x							
H. bolina nerina		x	x	x	x	x				x		
P.s. shepherdii*					x							
LYCAENIDAE												
D.h. taygetus			x	x	x		x					
Z. labradus		x							x	x	x	x
L. boeticus										x	x	
N.a. agricola										x		
E.l. lineata				x	x							
C. absimilis	x	x						x	x	x	x	
C.c. consimilis										x	x	
C. xanthospilos*									x			
C.h. heathi	x											
C.e. erinus										x		
C. acastus										x		
C. margarita*								x				
C.h. hyacinthus			x									
S.p. pseudocassius		x			x	x						
H.b. berenice		x		x								x
P. felderi							x					x
Z. karsandra											x	
N.b. biocellata			x									
D.e. diovis					x							
E.l. australis										x		
Z. h. attenuata											x	
C.f. halys				x								

History of the Museum's Entomology Department

The first settlers came to the site of Melbourne in 1835, and 19 years later on 1st March, 1854, the Museum of Natural History was established. The first appointment was zoologist William Blandowski, who conducted collecting expeditions. In 1856 the newly formed Museum was transferred from a small room in the Assay Office in Latrobe Street to the University of Melbourne, under the care of Professor (later Sir) Frederick McCoy. In 1858 Professor McCoy was appointed the first Director of the Museum, which he remained until his death in 1899. During these years numerous improvements were made, new material amassed, collections purchased and scientific works published.

In the field of entomology, the purchase of the John Curtis collection of British and foreign insects (1863) was of great importance. Other acquisitions included parts of the Francis Walker material, and the Castlenau collection of Coleoptera. The turn of the century was an important time for the Museum. Professor (later Sir) Baldwin Spencer (who in 1887 became Professor of Biology at the University of Melbourne) was appointed a Trustee in 1895, and Honorary Director in 1899 following the death of Sir Frederick McCoy. In the same year the Museum was removed from the University to its present location in Russell Street.

Conservation has always been a principle of Museum activity, and as early as 1907 Professor Baldwin Spencer suggested a committee for advising the Government on fauna protection and national parks. Basic to the operation of the Museum is the acquisition of collections of scientific value because its service of identifications, its research and its exhibitions depend on them. In addition to the specimens collected by staff, large numbers of collections have been received from natural history expeditions (e.g. the Horn Expedition to Central Australia, and several Antarctic Expeditions) and from private collectors. Major items received by the Department of Entomology since the turn of the century include:

H.J. Carter collection of Coleoptera (1923)

John Clark collection of Formicidae (1943)

C. French sen. collection of Australian and foreign insects (1918)

R. Kelly collection of Australian Thysanoptera (1934)

G. Lyell collection of Australian Lepidoptera (1932)
C. Oke collections of Australian Coleoptera (1958)
T.G. Sloane collection of Australian Carabidae,
F. E. Wilson collection of Australian insects (1960)

The Museum commenced its operation as a single unit, but with the increase of material and activities, it became necessary to divide the operations into separate departments. At present there are seven such departments, viz. Mineralogy, Palaeontology, Vertebrates, Ornithology, Invertebrates, Entomology and Anthropology. Although entomological specimens in the early years were cared for by the zoologist, the section grew rapidly. F.P. Spry was appointed Museum Assistant in 1904, but later became the first entomologist, a position which he occupied with considerable distinction until his death in 1922. He was followed by the well known termite specialist G.F. Hill, who was with the Museum from 1923 to 1926. John Clark was next appointed to the position which he occupied until 1944., He studied Australian ants, and became the authority on this subject. Extensive collections were made throughout Australia.

The next appointed was A.N. Burns, who had had an association with the National Museum dating back to 1915. He occupied the position for the next 20 years until his retirement in 1964, when the position was taken by Arthur Neboiss, the present curator.

The collection's holdings are currently estimated at 2 million for the class Insecta and 10,000 for the class Arachnida with approximately 10,000 and 100 primary types respectively.

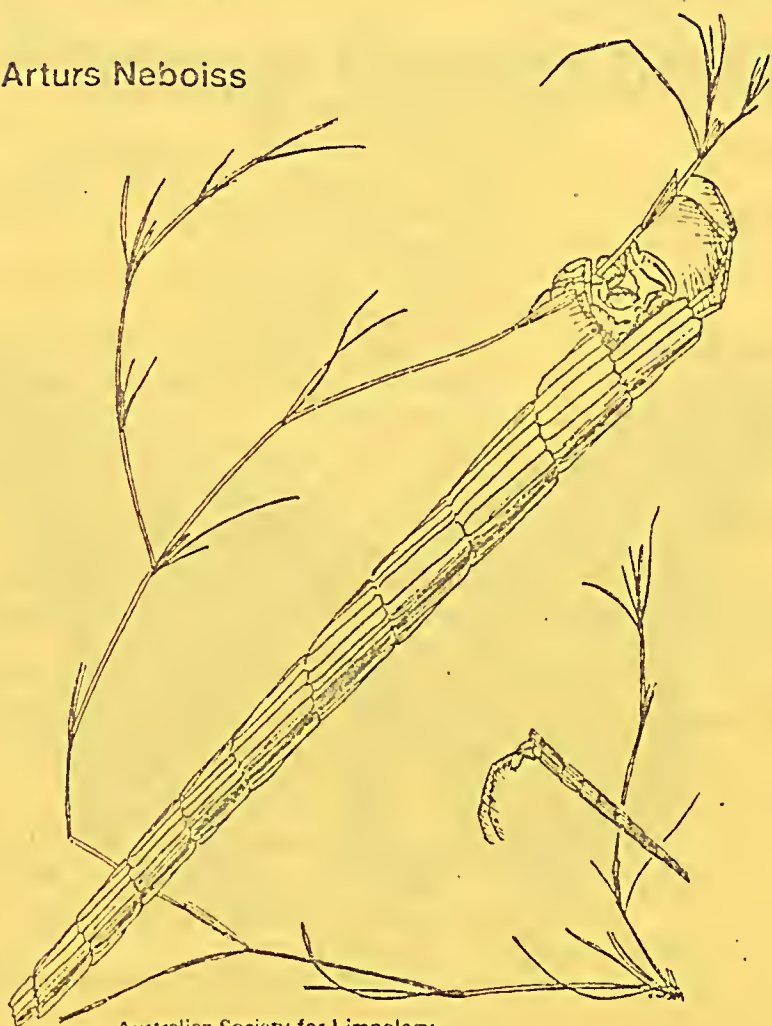
The following articles in this series will contain information on our historical collections and their collectors.

The Council Meeting of 16 September 1983 has been cancelled.

The Society wishes to extend its deepest sympathy to the relatives and friends of Dr Harry Wharton. His contribution to entomology was enormous and he will be sadly missed.

Checklist and Bibliography of the Australian Caddis-Flies (Trichoptera)

Arturs Neboiss



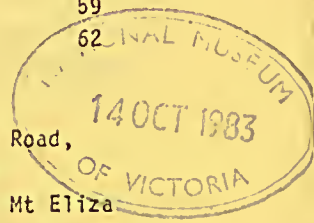
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DIARY OF COMING EVENTS

October 21st	- A. Yen and J. Blyth - 'Work of the Survey Department of the Museum
November 18th	- Council Meeting
December 16th	- Member's Night and Christmas Breakup

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VOL. 13 NO. 6



DECEMBER 1983

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are :

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 P.M. on the second last Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S)
Student, Associate.....	5.00 (Aust)	" 5.75 "

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

The President, P. Carwardine, chaired the meeting which opened at 8.15 pm and welcomed members and visitors.

- Attendance:** J. Blyth, K. Clark, D. Crosby, L. Dunn, I. Faithfull, D. & J. Gooding, M. Hunting, P. Kelly, P. Lillywhite, M. Le Souef, G. & J. McColough, H. Martin, D. & N. Stewart, K. Walker, A. Yen.
- Apologies:** G. & J. Burns, R. & J. Field, D. & J. Holmes, T. New, N. Quick.

Minutes of the August General Meeting received.

- Correspondence:** The acting Secretary (P. Kelly) detailed and tabled recently-received correspondence.

- Editor's Report:** K. Walker requested articles for forthcoming issues.

- Excursions:** P. Carwardine gave details of the next excursion which will be on Sunday 27th November in the Kyneton area.

- General Business:**
1. D. Crosby indicated that the National Parks Service wants data on the effects, if any, of the activities of apiarists on entomological work in National Parks.
 2. M. Le Souef gave details of the subdivision and road building in the Cape Tribulation rain forest as shown on the Television program 'Nationwide'.
It was moved M. Le Souef and seconded D. Crosby that the Club write in protest.
 3. Tickets are still available for the Memorial Fund Raffle.
 4. An enquiry was made as to what submissions have been made by the Club to the State Conservation Strategy.

Exhibits:

1. Ian Faithfull showed a specimen of a very small Cabbage White butterfly (*Pieris rapae*) and enquired as to possible reasons for the small size. He also exhibited specimens of *Hesperilla donnysa* from East Gippsland.
2. K. Walker and P. Kelly exhibited gynandromorph forms of the Orchard Swallowtail (*Papilio aegaeus*) and the Imperial White (*Delias harpalyce*)

The President then introduced the speakers for the evening, Mr John Blyth and Dr Alan Yen both of the Survey Department, Museum of Victoria. The talks were excellently illustrated and the interest generated was evident from the numerous questions asked. A vote of thanks was proposed by the President.

Le Souef collection to A.N.I.C.

The large insect collection of the late Zoo Le Souef has been donated to the Australian National Insect Collection. It comprised of approximately 15,000 insects of all families. There were 9,500 Lepidoptera, 4,500 Coleoptera and the remainder made up of various insect orders. The main part of interest being 46 drawers of butterflies, 60 drawers of moths, and 30 drawers of beetles.

It is interesting to note one scientist's assessment, that 90% of the insects came from generally inaccessible, or interesting localities. The specimens are well labelled with data of locality and date of capture, and are therefore of great scientific value.

As a token of gratitude for the gift, a plaque bearing the names of J.C. and M. Le Souef, has been placed on the Honour board in the Entomological Department, along with all the other great collectors of the past, who have donated their collections to the Museum for posterity.

David R. Holmes

by
Mr John Blyth, Museum of Victoria

Gippsland east of the Snowy River is probably the least known, yet biologically most diverse, area of comparable size in Victoria. It is also scenically beautiful. The Errinundra Plateau, in particular, has 500 year old forests of a unique floristic type, and spectacular escarpment scenery to rival anything in Australia.

John presented a slide show illustrating the beauty of the Errinundra Plateau, and outlining the role of volunteers in descriptive surveys of small mountain streams. Slides of aquatic insects of various kinds were used to illustrate their role in streams ecosystems, and to point out physical features of the stream bed important in determining the composition of invertebrate communities.

The slides included many examples of pristine mountain streams - from tiny rills overhung by a dense canopy of cool temperate rainforest, to mossy cascades and series of deep gorges and waterfalls. Some aspects of timber extraction methods as currently used on the Errinundra Plateau were also shown. The potential impact of clearfelling on both the old forests and the aquatic communities of East Gippsland is immense. The potential for damage to stream fauna resulting from structural changes in the stream bed brought about by erosion sediment is well known and examples of streams suffering heavy sediment input were shown.

What little is known of the invertebrate fauna of the area suggests that many endemic species in many groups still remain to be identified. The long term value of large, as yet mainly unmodified, areas of far East Gippsland deserves much wider recognition by biologists and naturalists of all kinds.

THE BUTTERFLY AND ME

by

Mrs Jean Brown, Cundletown, N.S.W.

"There was never a King like Solomon - not since the world began; yet Solomon talked to a butterfly as a man would talk to a man."
Rudyard Kipling

Have you ever talked to a butterfly? Have you watched a Blue Triangle searching for just the right flower on which to take its' breakfast? Have you seen the beauty of the unfolding wings of an emerging Wanderer, pulsating with new life? Have you almost broken your neck following the flight of a pair of spiralling Meadow Argus? Or watched a female Orchard testing each leaf on the orange tree, for the tenderest one on which to deposit her pearl-like egg?
I have.

The most enjoyable and interesting part of studying butterflies lies, not in the pursuit or capture, but in the waiting and watching. One sees so much more than just the "prey" - a spider in her web, waiting for some unwary insect; a bumble bee dipping into each flower; a beetle crawling on a tree trunk or the leaves stirring in the breeze.

The idea that one must dash about in pursuit of the lovely creature desired, is quite wrong. When I first began the task of making a collection, the hair-raising gallop over fallen branches and rolling stones, was almost my undoing.

One comes to realize that if one stands very still, just looking, presently the butterflies will come looking at you. Of course, usually the "lookers" are not the ones needed, and the coveted ones stay out of reach, high on the trees. So, patience soon becomes one of your acquired virtues, as well as a heightened sense of beauty of Nature.

Butterflies are such creatures of habit, and each day come to the same bushes to take nectar or to lay a shining egg or two. Station yourself at a certain spot, at a certain time and most likely the butterfly appears on cue. This sort of study of their habits tends to make one feel a bit of a cad if tempted to capture

it. The first time I succumbed to this shabby trick, I was so shaken, by the time I had it in the bottle, I almost gave up collecting!

Stand very still by a plant where a butterfly is laying her eggs. When she flies off, take a couple home, together with a good branch of the host plant. After days of waiting, the young larvae hatch. Go each day to get fresh leaves for them to eat, sometimes for 6-8 weeks. Watch them pupate, and then wait (and wait and wait) for the imago to emerge. After a couple of hours, her wings are set and exercised, so put a hand in the cage and coax her onto it.

Now comes the best part - walk slowly to the sunshine. Her wings flutter and then she flies off, to circle around awhile, then away in search of food and a mate. The first time one has this experience, the eyes become a little misty.

Occasionally one can be fortunate enough to see the migration of particular species.

A great flight of Caper Whites passed over the garden one day, flying for about an hour. Another day, came Yellow Migrants, in groups of 5-10, and flew by for quite some time. In Queensland, we saw masses of Blue Tigers, flying along a beachfront. One had to try to avoid them, as they flew with determination and no regard for obstacles in their path.

On a lovely day, out in the sun, hoping for something new, or special, look around, and sometimes down (especially if the paddock has cows grazing in it!) there is always something new to see. To check up on the progress of larvae on a certain plant or peer under the leaves of a patch of weeds. The exercise is good for body and for soul, for the butterflies will be around; hopefully, and it is possible to convince yourself that the housework is not awaiting you and you are not loafing.

CHECKLIST OF VICTORIAN STIGMODERA (CASTIARINA)
(COLEOPTERA: BUPRESTIDAE)

Sub-genus CASTIARINA LaPorte & Gory
by Gordon Burns, 3 Inglis Street, Mornington

(Note: Indented specific names are synonyms)

<i>abdominalis</i> Saunders	<i>castelnaudi</i> Saunders
<i>unica</i> Kerremans	<i>thomsoniana</i> Masters
<i>adealidae</i> Hope	<i>castelnaudi</i> Thomson
<i>aeneicornis</i> Saunders	<i>laportei</i> Kerremans
<i>laudabilis</i> Kerremans	<i>cincta</i> Blackburn
<i>amipennis</i> Saunders	<i>rubrocincta</i> Kerremans
<i>amplipollis</i> Carter	<i>coeruleipes</i> Saunders
<i>andersoni</i> L & G	<i>colorata</i> Hope
<i>verax</i> Kerremans	<i>costata</i> Saunders
<i>dicax</i> Obenberger	<i>crenata</i> (Donovan)
<i>argillacea</i> Carter	<i>amphicroa</i> (Boisduval)
<i>atricollis</i> Saunders	<i>sexspilota</i> L & G
<i>tripartita</i> Kerremans	<i>sieboldi</i> L & G
<i>attenuata</i> Carter	<i>cruentata</i> (Kirby)
<i>aurantiaca</i> Carter	<i>vegeta</i> Hope
<i>australasiae</i> L & G	<i>coeruleiventris</i> Saunders
<i>assimilis</i> Hope	<i>haroldi</i> Saunders
<i>melbournensis</i> Thomson	<i>viridiventris</i> Saunders
<i>puerilis</i> Kerremans	<i>neologa</i> Thomson
<i>bella</i> Saunders	<i>stillata</i> Blackburn
<i>cruentata</i> L & G	<i>coerulea</i> Kerremans
<i>bifasciata</i> (Hope)	<i>coelestis</i> Kerremans
<i>bicincta</i> (Boisduval)	<i>crux</i> Saunders
<i>bicingulata</i> L & G	<i>cupreoflava</i> Saunders
<i>dejeani</i> Gory	<i>magnetica</i> Carter
<i>bicincta</i> Gory	<i>cupricollis</i> Saunders
<i>trispinosa</i> Kerremans	<i>alternozona</i> Thomson
<i>bremei</i> (Hope)	<i>deyrollei</i> Thomson
<i>brutella</i> Thomson	<i>julia</i> Thomson
<i>graphisura</i> Thomson	<i>chobauti</i> Thery
<i>uniformis</i> Kerremans	<i>fairmairei</i> Kerremans
<i>victrix</i> Obenberger	<i>cyanipes</i> Saunders
<i>callubriensis</i> Carter	<i>marginicollis</i> Saunders
<i>carminea</i> Saunders	<i>bifasciatella</i> Obenberger
<i>colligens</i> Kerremans	
<i>felix</i> Kerremans	

dece~~m~~maculata (Kirby)
inaequalis Kerremans
picta malleeana Carter
delectabilis Hope
dimidiata Carter
leai Carter
dorsalis Obenberger
distinguenda Saunders
differens Carter
**elderi* Blackburn
diversa Kerremans
erasma Carter
eremita Blackburn
erythromelas (Boisduval)
longula Blackburn
cicerini Obenberger
erythroptera (Boisduval)
nigroterminata Carter
flava Saunders
flavescens Masters
flava Thomson
flavidula Kerremans
flavopicta (Boisduval)
bicolor L & G
flavovaria Saunders
flavopicta L & G
flavopurpurea Carter
fossoria Carter
fulviventris MacLeay
ochreiventris Saunders
guttigera Blackburn
mackayana Carter
gibbicollis Saunders
fascigera Kerremans
grata Saunders
guttata Blackburn
hateleyi Barker
helmsi Carter
hilaris Hope
hoffmanseggi Hope
ignea Blackburn
imitator Carter

inconspicua Saunders
indistincta Saunders
insignis Blackburn
caudata Kerremans
insularis Blackburn
interstitialis Carter
jekelli Saunders
jospilota L & G
lacerta Obenberger
jucunda Saunders
observans Kerremans
kerremansi Blackburn
apicalis Kerremans
kershawi Carter
kitatae Barker
kirbyi (Guerin)
luteipennis Gory
media Hope
militaris Carter
montigena Oke
mustelamajor Thomson
gibbosa MacLeay
nasuta Saunders
fossithorax Obenberger
obscura Saunders
octomaculata Saunders
octospilota L & G
femorata L & G
ornata Blackburn
pallidipennis Blackburn
pallidiventris L & G
rustica Kerremans
ylgarni Obenberger
parallela White
elongatula MacLeay
perlonga Carter
piliventris Saunders
generosa Kerremans
praetermissa Carter
producta Saunders
acutipennis Thomson
sulcicollis Kerremans

pulchripes Blackburn
punctatosulcata Saunders
litigiosa Kerremans
punctiventris Saunders
pisciformis Carter
recta Saunders
dilatata Carter
dilatocollis Carter
rectifasciata Saunders
vigilans Kerremans
robusta Saunders
rufipennis (Kirby)
crocipennis L & G
crocipennis Hope
quadrifoveolata Obenberger
sancta Carter
scalaris (Boisduval)
cyanicollis (Boisduval)
crucigera L & G
viridis L & G
crucigera Hope
macleayi Blackburn
prudens Kerremans
suavis Kerremans
crucioides Obenberger
semicincta L & G
semisuturalis Saunders
septemguttata Waterhouse
tyrrhena Blackburn
sexguttata MacLeay
plagiata Gory
crenata L & G
hopei Boheman
similata Boheman
kreffti MacLeay
variata Kerremans
signata Kerremans
simulata L & G
perplexa Hope
helenae (Hope)

lanuginosa (Hope)
lais Thomson
phryne Thomson
fraterna Kerremans
distinguenda Thomson
ravilla Obenberger
acutangula Obenberger
yorkensis Obenberger
skusei Blackburn
speciosa Kerremans
spinolae Gory
straminea MacLeay
bimaculata Saunders
cara Blackburn
placens Kerremans
addenda Kerremans
johannae Thery
subgrata Blackburn
campestris Kerremans
subpura Blackburn
testacea Saunders
thomsoni Saunders
dulcis Blackburn
colorata Kerremans
timida Kerremans
triramosa Thomson
undulata (Donovan)
laportei Boheman
variopicta Thomson
vicina Saunders
bicincta L & G
victoriensis Blackburn
sensitiva Kerremans
humeralis Kerremans
tillyardi Carter
vittata Saunders
wilsoni Saunders
sigma Kerremans
septentrionis Obenberger
xanthopilosa Hope
splendida Gehin

Acknowledgements

I thank the following for their assistance: Dr S. Barker, University of Adelaide; Dr A. Neboiss and Mr K. Walker, Museum of Victoria; Mr K. Hateley, Kiata.

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- BARKER, S. (1979) New species and a catalogue of Stigmodera (Castiarina) (Coleoptera: Buprestidae) Trans. R. Soc. S. Aust., 1, 1-23.
- BARKER, S. (1980) New species and new synonyms of Stigmodera (Castiarina) (Coleoptera: Buprestidae) Trans. R. Soc. S. Aust., 1, 1-7.
- CARTER, H.J. (1929) A check list of the Australian Buprestidae. Aust. Zool. 6, 265-304.

*Specimens in MV from Wilson's Prom. would appear to be incorrectly identified, *S. elderi* being a W.A. species.

To further our data collecting programme (ENTRECS) into the distribution of Victorian Insects, the above list is submitted as an aid to recording the distribution of Victorian BUPRESTIDAE.

It would be appreciated if members would check their collections and if they have Victorian records of any of the species listed, could they please forward these to the author.

REMEMBER TO BRING A PLATE OF FOOD FOR THE CHRISTMAS BREAK UP!

Castlenau Collection

This is a very large and comprehensive collection of Coleoptera from all parts of the world and is said to contain a number of TYPES. All the specimens are staged on cards or thin pieces of sheet cork. In the absence of a specimen of any particular species, and where a drawing or figure of it was available, this has been carefully cut out and coloured and placed on a stage in the collection under the species name.

The Comte de Castlenau - whose real name was Francois Louis Nompur de Caumont, was born in London on December 25th 1810. During his life he filled various official posts in French colonies. He came to Australia in 1882, and visited Sydney and Brisbane in 1875, and was famed as an ichthyologist and entomologist. He employed a collector named Gerardin.

Castlenau's early writings were written under the nom-de-plume of Laporte or Delaporte, later under the name Castlenau.

At the time of his death he was Consul General for France in Melbourne. Between the years 1832-69 he published seven papers on entomology.

Howitt Collection

This is a very extensive collection of named Coleoptera which was presented to the University of Melbourne, but is now, and has been for many years on permanent loan to the National Museum of Victoria.

Dr Godfrey Howitt was born in England in 1800, and in 1839, in company with his brother Richard, a nephew, and two brothers-in-law, (one of the latter being Robert Bakewell) migrated to Australia. He was an M.D. Edinburgh, and later became famed as a botanist and entomologist, and was a founder of the Royal Society of Victoria, 1854.

Many of the insects in his collection were named by specialists abroad.

MINUTES OF COUNCIL MEETING, 18 NOVEMBER 1983

The President, P. Carwardine, chaired the meeting, which opened at 9 pm.

Minutes of the July Council Meeting: passed (D. Stewart/K. Walker)

Correspondence: received (P. Kelly/M. Le Souef)

Treasurer's Report: G. Burns reported that the general account now stands at \$2281.08 in credit, and the Memorial Fund at \$1074. There are 58 financial members. After discussion it was decided to reinvest \$1500 from the general account in a term deposit account.
Passed (K. Walker/M. Le Souef)

Editor's Report: K. Walker requested more articles for the journal.
Received (P. Stewart/G. Burns)

Excursions: P. Carwardine gave further details of the imminent excursion to the Kyneton area. After discussion it was decided to hold a later excursion to the Lorne area, probably on 26 February 1984, to examine recovery of insects from the bushfires:

General Business:

1. Charges for hire of meeting rooms at Clunies Ross House are to be instigated from January 1984. Noted.
2. Discussion was held on the Society's potential for providing either manned or static displays at venues such as Naturalist group meetings and libraries.

It was resolved (M. Hunting/K. Walker) 'that David Holmes be approached to provide some display cases (for which he would be reimbursed by the Society) and that members of the Society be asked to contribute insects to 'promotional displays' to be used to advertise the Society's interests in various ways'.
Passed.

3. Memorial Fund. The President informed Council that the Committee had now met and

selected an award winner from amongst the several nominations received. A formal announcement will be made at the December meeting.

Council reaffirmed its intention for the Society to cover the whole cost (approximately \$100) of the initial award (G. Burns/D. Stewart).

4. Programme. The February meeting is to be a workshop on rearing techniques. Several people have agreed to give short talks, and contributions 'from the floor' will be welcome.

5. Insect Conservation in Victoria. A. Yen informed Council that the Division of Fisheries and Wildlife is seeking views on the importance of conserving invertebrates in Victoria, and whether particular species should be designated as 'protected wildlife'. After considerable discussion, touching on many aspects of 'species-orientated conservation', D. Crosby and A. Yen were asked to look into its feasibility and report later to Council. In the meantime, general concern should be expressed.

5. Replacement Secretary. Because of the Secretary's likely periods of work overseas in 1984, P. Kelly offered to 'stand in' whenever necessary. Correspondence should still be sent to T. New.

6. Any other business:

i. K. Walker thanked G. & J. Burns for valuable work they have been doing in sorting the Museum of Victoria collection of Buprestidae. P. Kelly has recently started a similar task on the paropsine Chrysomelidae.

ii. J. Burns reported progress on entering Coleoptera in the ENTRECs Scheme.

The meeting closed at 10 pm.

The President and Office Bearers would like to wish all members a very Merry Christmas and Happy New Year.

- Good Collecting! -

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OFFICE BEARERS 1983/1984

President	- Peter Carwardine, 2a Victoria Road, Malvern Telephone - 211 8958
Vice-Presidents:	- D. Johnson, 7 Eranimil Drive, Mt Eliza Telephone - (03) 787 3013 - R. Condon, 96 Shannon St., Box Hill Nth Telephone - 898 6300
Hon. Secretary	- Dr Tim New, Zoology Dept., LaTrobe Uni., Bundoora Telephone - 718 1007 (H) 479 2247 (Uni)
Hon. Treasurer	- Gordon Burns, 3 Inglis St., Mornington Telephone - 75 7370
Hon. Editor	- Ken Walker, Museum of Victoria, 71 Victoria Crescent, Abbotsford 3067 Telephone - 419 5200 (MV) 481 2043 (H)
Excursion Secretary	- Peter Carwardine, 2a Victoria Rd., Malvern
Past President	- Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659 Telephone - (057) 93 8230
Councillors	- Mesdames Joy Burns, Mary Le Souef, Messers David Crosby, L. Dunn, Ross Fields, D. Stewart, A. Yen

DIARY OF COMING EVENTS

December 16th	- Member's Night and Christmas Breakup
February 17th	- Workshop on Rearing Techniques
February 26th	- Excursion to Lorne District
March 16th	- Council Meeting

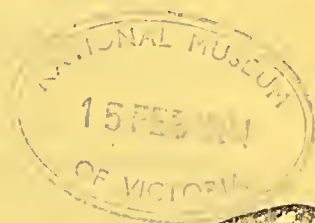
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VOL. 14 No. 1



FEBRUARY 1984

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 pm on the third Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....10.00 (Aust)	Country Members.....8.00(A)
Student, Associate..... 5.00 (Aust)	

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE GENERAL MEETING, 16 DECEMBER 1983

The President chaired the meeting, which opened at 8.15pm and welcomed, especially, Mrs Norma Harrison to the meeting.

Apologies: D. Crosby, R. & J. Field, N. Quick, A. Yen.

Attendance: G. & J. Burns, K. & E. Clark, L. & K. Dunn, N. & J. Harrison, D. & J. Holmes, M. Hunting, S. Johnson, P. Kelly, M. Le Souëf, T. New, S. Smith, D. & N. Stewart, R. Vagi, K. Walker.

Minutes of the October meeting: accepted K. Walker/D. Stewart.

Correspondence: The Secretary gave details of recent incoming and outgoing correspondence. Received: M. Le Souëf/L. Dunn.

Treasurer's Report: G. Burns stated that the overall credit balance is \$2337.38, and the memorial fund stands at \$1074.00. There are 59 financial members. Received: D. Holmes/D. Stewart.

Editor's Report: K. Walker summarised the contents of the 1983 **Victorian Entomologist**: 74 pages included 21 articles by a total of 12 authors. He appealed for other members to contribute to the journal. Received: P. Kelly/G. Burns.

Excursions: P. Carwardine reported on the excursion to the Cobaw and Wombat State Forests. Rather few insects were seen, due partially to poor weather. He also informed members of the forthcoming excursion, probably to the Lorne area on Feb. 26.

General Business: 1. The President reported progress towards preparation of display cases of insects for the Society's use and exploration of possible venues. Several libraries on the Mornington Peninsula had already expressed interest. A vote of thanks to D. Holmes for making several excellent exhibition cases (M. Hunting/N. Harrison) was passed with acclamation, and

considerable discussion was held over the contents of potential exhibits. Several members took boxes, and were asked to bring their projected displays for discussion at the February meeting.

2. The President reminded members that the February meeting was to be a workshop on rearing techniques, and that contributions to the discussion would be welcomed.

3. M. Le Souëf drew attention to a recent review by Andrew Atkins on a booklet by B. Given, a New Zealand entomologist who spent some time collecting thynnid wasps in Victoria some years ago.

4. P. Kelly showed a greetings card depicting a plate of insects by G.F. Angas.

5. D. Holmes: general news of Alan May.

Exhibits:

1. P. Carwardine. An excruciating mass of hatched eggs on a grass stem from Anglesea.

2. K. Clark. Pterygophorus sawflies, from dock. He queried whether this sawfly still occurred in the Melbourne area.

3. D. Holmes. A case of cicadas (including the world's largest species) and stick insects from Malaysia.

4. P. Kelly. A box of named Paropsis beetles, representing many of the 65 or so named species in this genus.

5. T.R. New. A series of the heliconiid butterfly Agraulis vanillae captured recently in Hawaii. The species is a recent (?1977) introduction to Hawaii, but is already very well established.

6. M. Hunting. i) A box of New Guinea butterflies, mainly from the Kokoda Trail area.
ii) A box of beetles, including Buprestidae from the Cardinia Reservoir area.

7. P. Carwardine. An article in 'Geo' on Australian buprestids, mainly Castiarina.

Notes:

i. N. Harrison - swarms of beetles around trees in early evening.

ii. K. Walker - Bogong moth flights noted recently.

iii) M. Le Souef - recent abundance of H. merope.

iv) P. Carwardine - an article from the Age, on dangers of the European wasp. Several members contributed comments on the potential problems and control methods for the wasp.

IMPORTANT NOTICES

Due to the generally poor collecting conditions this season the excursion on 26th February 1984 will not take place.

Subscriptions are now due

Le Souëf Memorial Award

The President announced that the initial award is to be made to Mr Keith Hateley, a life member of the society, and who has contributed much to entomology in Victoria over many years. The presentation will be made at the Annual General Meeting in June, and it is hoped that Mr Hateley will be present.

The raffle for the painting by Andrew Atkins was then drawn, the winner being N. Le Souef.

The President closed the meeting at 9.40 pm, wishing members the compliments of the season, and inviting all present to refreshments.

AUDIBLE STRIDULATION IN PUPAE OF HYPOCHRYSOPS DIGGLESII (HEWITSON)
(LEPIDOPTERA: LYCAENIDAE)

by W.N.B. Quick, 10 Kevin Court, Donvale, Victoria

In the course of observations on the cyclic presence and absence of Ogyris zozine typhon W & L, together with its attendant Camponotus ant, it was noted this year that in between broods, when larvae of O. zozine were either absent or too small to hold the attention of the large Camponotus ant, their place was taken by a small Crematogaster ant. This genus of ants is noted for its association with larvae of Lycaenid butterflies, and a brief examination of the host mistletoe, Dendrophthoe aff. vitellina on a Tristania, disclosed the presence of a large population of larvae of Hypochrysops digglesii.

Larvae were well advanced, and all appeared in the final instar, although many unhatched eggs suggested that a further brood might co-exist with larvae of Ogyris zozine later in the season. Several pupae were noticed under bark, but during the following week most were pupating in curled leaves of the mistletoe which had been securely 'silked' to the stem, and a number of these were collected.

For rearing purposes, most of these dry, curled leaves were mounted on a card, together with several pupae mounted directly on the card. During this process it was noticed that the pupae were stridulating vigorously, and a recording was made of the sounds.

As has been noticed by various entomologists, these sounds appear to have two levels and frequencies. A low-pitched note emitted on minor disturbances, and a shorter, high-pitched note, almost a click, produced when touched.

In the case of these pupae of Hypochrysops digglesii, the sounds are remarkably similar to, and almost as loud as those produced by pupae of Arhopala (formerly referred to Narathura) species, but it has not yet been possible to compare the two sounds for 'appearance' on the cathode ray oscilloscope. This similarity itself is not uninteresting, for, until recently, Hypochrysops digglesii had been included within the genus Pseudodipsas, more than a little uncomfortably.

Carrying comparisons a little further, the eggs of H. digglesii bear a close resemblance to those of Ogyris spp. The larvae likewise, save for a pair of dorsal yellowish or orange 'arrow head' markings, bear a close resemblance to those of the smaller Ogyris spp., with which of course they share Mistletoe as their host plants. The pupae closely resemble small Ogyris ianthis pupae, with the posterior segments markedly flattened into an almost disc-like cremastral structure, a structure shared by pupae of Arhopala spp. Overall, it seems that H. digglesii may be regarded as a 'transition' species, not conforming particularly closely to man's concept of any particular genus. The writer finds it hard to accept the statement (Common & Waterhouse, 1972) that the male genitalia, larvae and pupae place it closer to Hypochrysops than they did to the genus to which it was formerly referred, although it must be agreed that ants of the genus Crematogaster are associated with one or two species of Hypochrysops.

An examination of a second former colony of Ogyris zozine typhon on an unidentified mistletoe on Acacia, near Palm Cove, revealed that here too, the Ogyris-Camponotus association had been replaced by Hypochrysops digglesii and Crematogaster sp.

From the few additional known occurrences of Ogyris zozine within the same general area (the 'Northern Beaches' area near Cairns), it appears that after two quite abnormally hot, dry seasons, Ogyris zozine typhon may be established to an increased extent somewhat lower and closer to the coast, but at no great distance from the two quoted instances. The effect of these dry seasons on the Ogyris colonies in the drier tableland habitats is not known, but reports from other collectors indicate that they may have suffered considerably.

References:

- Dunn, K.L. (1983). A Record of Pupal Stridulation for a Species of the Genus Hypochrysops. Victorian Entomologist 13(2): 13-14.
Common, I.F.B. & Waterhouse, D.F. (1972 et 1981) "Butterflies of Australia" Angus & Robertson, Melbourne.

BOOK REVIEW

by Alan Yen

THE IUCN INVERTEBRATE RED DATA BOOK. Compiled by S.M. Wells, R.M. Pyle, and H.M. Collins. Published by IUCN (International Union for Conservation of Nature and Natural Resources). 1983. 632pp.

For the past decade, the Red Data Book has been keeping us informed on the plight of many of our endangered vertebrates. It is pleasing to see that the IUCN has recognized the importance of invertebrates and published a Red Data Book specifically on them. As with the vertebrate volumes, the Invertebrate Red Data Book only deals with species endangered by human activity. Considering the number of invertebrate species (1.4 million described species and many more undescribed ones) and their ecological importance, it is inevitable that many invertebrates are threatened with extinction. Indeed, many invertebrate species are now probably extinct through habitat destruction without us ever knowing that they existed. As the range of many invertebrate species involves a small area, a single event (such as clearing a small patch of forest or the impounding of a single river) can make one or more species extinct. The Tasmanian Torrent Midge, for example, is only known from a single waterfall on the Denison River in South West Tasmania.

The Red Data Book categorizes invertebrates according to their known conservation status, ranging from extinct, endangered, vulnerable, rare, indeterminant or insufficiently known, as well as commercially threatened and threatened communities. The inclusion of threatened communities is a welcome category because it recognizes the role of habitat protection in conservation. It brings up the question of the value of listing endangered species (thereby increasing their commercial value to collectors) compared to habitat conservation. Ultimately the answer will probably lie in between, and the two will complement each other.

The threats to invertebrates include changes to terrestrial and aquatic habitats, pollution, changes to closely associated flora and fauna (loss of host or exotic introductions), threats to individual species (over-collecting), and commercial overexploitation.

Each major group of invertebrates is briefly reviewed, and then each listed species is presented with a brief description of the

species, its distribution, biology, habitat, ecology, scientific interest, conservation status, the threats imposed on it, and suggested conservation measures.

There are over 250 invertebrate species listed in the book. Over half of these are molluscs and crustaceans endangered by economic overexploitation. There are 71 species of insects, most of which are threatened by habitat destruction or alteration or by over-collecting. Australia is represented by 19 species, of which eight are insects. These are the Otway Stonefly, Mt Kosciusko Wingless Stonefly, Mt Donna Buang Wingless Stonefly, Large Blue Lake Mayfly, Small Hemiphysalia Damselfly, Giant Torrent Midge, Tasmanian Torrent Midge, and the Australian Nothomyrmecia Ant.

The list of Australian insects illustrates one of the limitations of the Red Data Book system. Any individual can nominate a species for inclusion. The IUCN considers the reasons for inclusion and after consultation with experts in the field involved, decides whether to add that particular species to the list. A species can be removed if it is no longer considered threatened. This system depends on having adequate knowledge about the species and having someone willing to do the necessary ground work to get a species nominated. With regard to Australia, it is obviously the freshwater entomologists who are willing to use this system to attempt to conserve particular species.

The book concludes with a list of threatened communities (none of which are Australian). There are brief review sections on conservation legislation for invertebrates in various countries, and a discussion on the problems of invertebrate conservation. The Red Data Book stresses the need for more research, especially with regard to surveying habitats for invertebrate conservation.

I have two minor criticisms of the Invertebrate Red Data Book. The indexing system is cumbersome as species are listed according to Phylum or Class. In large groups like the insects, one has to search through 200 pages to find information unless you know the species name. This could be improved by dividing the contents to the Order level. The second problem is that many of the references are given as the name of an author followed by 'in litt.' The IUCN obviously want to give the reader all the current information and references, but giving a references as 'in litt.' without any indication of where the article is to be published makes it

difficult, if not impossible, to ever find the article. This could be overcome by including the addresses of persons who have nominated the particular species and who have supplied the references.

In summary, the Invertebrate Red Data Book is an important first step in getting people to recognize the importance of invertebrates. It is a well written and very readable book full of interesting information. It should be looked upon as a reference book rather than a book to be read from cover to cover. I would suggest that interested persons should ask their local library to purchase a copy rather than buying a copy themselves.

Acacia diffusa Lindl. - A New Larval Foodplant for Jalmenus evagoras evagoras (Donovan) (Lepidoptera: Lycaenidae).

by K.L. Dunn, Department of Zoology
Australian National University, Canberra 2601

Of the twenty four species of Acacia recorded from the Australian Capital Territory (Burbidge & Gray, 1970), Common and Waterhouse (1981) record five of these as larval foodplants of Jalmenus evagoras evagoras (Donovan). In addition to these, I record J. evagoras utilising Acacia diffusa Lindl. as a larval foodplant in the Black Mountain Reserve, A.C.T. All stages of this butterfly are present during January, and the larvae and pupae are attended by ants of the genus Iridomyrmex.

References

Common, I.F.B. and Waterhouse, D.F., 1981. Butterflies of Australia, Second Edition, Angus and Robertson, Melbourne 682pp.

Burbidge, N.T. and Gray, M., 1970. Flora of the Australian Capital Territory, Aust. Nat. Uni. Press Canberra 447pp.

Editorial Note: Since the Burbidge & Gray (1970) publication Acacia diffusa has been synonymised with Acacia genistifolia Link.

INCREASE YOUR KNOWLEDGE
Francis Walker Collection

Francis Walker was born at Arno's Grove, Southgate, England, on July 31st. 1809, and died at Elm Hall, Wanstead, on October 5th, 1874. He was Entomologist at the British Museum for a number of years. Between the years 1835-72 he wrote numerous papers on entomology, some of which dealt with Insects of "New Holland".

Walker made general collections of insects from all parts of the world, particularly Malaya. He acquired material collected by Alfred Russell Wallace, mainly from the Indo-Malayan region.

Between the years 1861-74 numerous consignments of insects were purchased from Walker by the National Museum, and each lot is listed in the file of correspondence between Walker and the Director of the Museum. All specimens sent by him had the name written in ink in his own handwriting on the pin label.

Henry Edwards, 1830-91

The first specimens of Lepidoptera supposed to have come to the National Museum are thought to have been collected by Henry Edwards. He was born on August 27, 1830, at Ross, Herefordshire, England, and died in New York, 1891. He was an actor by profession, and came to Australia in 1853, and was also a keen entomologist.

He applied for a position of "Curatorship" at Sydney, February 2nd, 1860. In 1865 he went to California, 1878 to Boston, and in 1879 to New York. It is stated that his collection of Lepidoptera is in the American Museum of Natural History, New York; and his collection of Australian Bees in the same museum. Between 1889-91 he wrote 5 papers dealing with entomology. Two of these were published in the Victorian Naturalist June 1890 and February 1891.

The Victorian Naturalist, September 1891 states in an obituary notice to Mr Edwards, that "he devoted his leisure time to entomology, and was one of the very first to study our Victorian Lepidoptera. Proceeding to America in 1867, he continued his favourite study, and during the last 35 years of his life formed one of the largest private collections in the United States. Between 1886-9 he continued his favourite study and compiled a bibliographical catalogue of the described transformations of North American Lepidoptera, including about 1000 species." Inter alia - This was published by the Smithsonian Institute - Edwards paid another visit to Melbourne 1889, and was present at some meetings of the F.N. Club.

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DIARY OF COMING EVENTS

February 17th	- Workshop on Rearing Techniques
March 16th	- Council Meeting
April 13th	- Parasitic Wasps, K. Walker

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VOL. 14 NO. 2



APRIL 1984

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 pm on the third Friday of even months, with the possible exception of the December Meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....10.00 (Aust)	
Student, Associate..... 5.00 (Aust)	Country Members.....8.00(A)

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST".

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE GENERAL MEETING, 17 FEBRUARY 1984

The President chaired the meeting, which commenced at 8.10pm.

Apologies: D. Crosby, D. & J. Holmes, M. Le Souëf, P. Lillywhite, N. Quick, D. & N. Stewart, A. Yen.

Present: G. & J. Burns, K. Clark, I. Faithfull, R. & J. Field, D. Gooding, M. Hunting, P. Kelly, C. & C. McQueen, T. New, R. Vargi, K. Walker.

Minutes of the December meeting: accepted (P. Kelly/G. Burns)

Correspondence: Received (J. Burns/J. Field)

Treasurer's Report: The Treasurer, G. Burns, presented the audited balance sheet for 1983. The present state is of an overall credit balance of \$2311.22 and the Memorial fund of \$1249.27. There are at present 15 members financial for 1984; 63 members were financial at the end of 1983. Received (K. Walker/K. Clark).

Editor's Report: K. Walker stressed that articles were urgently needed for forthcoming issues of the *Victorian Entomologist*. Received (G. Burns/R. Field).

Excursions: P. Carwardine commented on cancellation of the projected Lorne excursion because of the poor season. Several members commented that the season appeared to be late, rather than poor and noted butterflies seen recently. Danaus chrysippus appear to have been sighted unusually frequently in recent weeks.

Memorial Award: The Secretary commented that Keith Hateley had accepted the initial Le Souëf Memorial Award.

Exhibits and notes: 1. M. Hunting: comments on recent sightings of Trapezites symmorus, and a request for records for ENTRECS. He also asked members for help in preparing displays of East Gippsland insects for the National Parks Service.
2. T. New: information on recent events connected with conservation of the Errinundra Plateau.

3. I. Faithfull: a. an article on endangered invertebrates in 'Environment Victoria'.
b. Several anomalous beetles, difficult to key or atypical in coloration.
4. G. Burns: a. Stigmodera from Tasmania: a species mimicking a cantharid beetle.
b. Skeletonising cup-moth larvae from Inglewood.

Main Business: workshop on rearing techniques

P. Kelly (Coleoptera) and P. Carwardine (Lepidoptera) gave informative practical talks on many aspects of rearing and maintenance of chrysomelid beetles and Lepidoptera.

P. Kelly: importance of maintaining water supply to Eucalyptus foliage; use of coffee jars as containers; food specificity; incidence of viruses (low) and natural enemies; pupation sites; preservation of larvae in XAA.

P. Carwardine: a 'quick cage' for breeding, consisting of a muslin-covered cardboard box lined with paper (for oviposition by moths; flowers - especially Buddleia, Lantana, as food source; potted food plants; pupation media for moth larvae including sphagnum moss and rice hulls; paper 'straws' for skipper larvae; importance of foodplant lists as sources of 'likely' foods for unknown larvae.

After many questions, the Members were thanked by the Secretary.

The meeting closed at 10.15 pm.

MINUTES OF COUNCIL MEETING 16 MARCH 1984

The Vice-President, D. Johnson, chaired the meeting which opened at 8.05pm

Present: G. & J. Burns, M. Hunting, P. Kelly, M. Le Souëf, K. Walker, D. Stewart.

Apologies: P. Carwardine, D. Crosby, T.R. New, A. Yen

Minutes of November Council meeting: passed (D.Stewart/M.Le Souëf)

Correspondence: received (G. Burns/J. Burns)

Treasurer's Report: G. Burns reported that the general account now stands at \$2366.19 in credit, and the Memorial Fund at \$1249.27. There are 31 financial members. It was reported that D. Holmes had been paid \$50.00 for the display cases made for the Club. (Passed M. Le Souëf/D. Stewart)

Editor's Report: K. Walker noted that the British Museum had requested copies of the Victorian Entomologist. It was suggested that our complimentary list should be revised.

General Business: 1. P. Kelly presented the report of the Memorial sub-committee; Guidelines for the Memorial Award were adopted as presented with only minor modifications. (P. Kelly/M. Hunting)
2. It was resolved that an extra column be ruled in the attendance book to include the specific interests of members and visitors. (J. Burns/D. Stewart)

The meeting closed at 9.35 pm.

HONORARY TREASURER'S REPORT

Statement of Receipts and Expenditure - Year ended 31st Dec. 1983

Credit Balance Brought Forward 1029.82

RECEIPTS		EXPENDITURE	
SUBSCRIPTIONS	560.50	JOURNAL PRODUCTION	250.25
BANK INTEREST GENERAL A/C	39.11	POSTAGE	84.04
TERM INVESTMENT INTEREST	128.11	PROJECTOR USE	35.00
JOURNAL ADVERTISING	25.00	POSTAL REGISTRATION	20.00
SALE OF JOURNALS	27.00	ENTERTAINING SPEAKER	22.00
DONATIONS MEMORIAL FUND	370.00	XMAS SUPPER EXPENSES	4.84
SALE OF TICKETS		PRINTING OF HAND BILLS	57.60
MEMORIAL FUND	292.00	PURCHASE OF DISPLAY BOXES	60.00
		F.I.D.	.72
		B.A.D.T.	3.10
		CREDIT BALANCE GEN. A/C	809.03
	<u>2471.54</u>		<u>1346.58</u>
TERM INVESTMENT REPAYED	1000.00	TERM INVESTMENT	1500.00
PUBLICATIONS EQUIPMENT		TRANSFERRED TO MEMORIAL	
FUND TRANSFERRED TO		FUND	<u>917.00</u>
GENERAL A/C INC. INTEREST	<u>292.04</u>		
	<u>3763.58</u>		<u>3763.58</u>

ZOD LE SOUEF MEMORIAL FUND

Statement of Receipts and Expenditure - Year ended 31st Dec. 1983

Credit Balance Brought Forward 255.00

RECEIPTS		EXPENDITURE	
DONATIONS	425.00	S.E.C. BONDS	900.00
SALE OF TICKETS	416.00	TERM INVESTMENT	160.00
S.E.C. BONDS INTEREST	53.27	CREDIT BALANCE	89.27
	<u>1149.27</u>		<u>1149.27</u>

The area under discussion includes all the lands in the south-west Pacific, geographically surrounded by great expanses of ocean with the exception of the north-westerly borderline, where it merges with the Oriental faunal region through the Sunda Islands. There are several choices where to draw the line of separation - for this discussion the Webers line which lies close to the continental shelf, and beyond which the Australian element fall off rapidly, is accepted in preference to Wallace's line. Thus the information includes the islands Ceram and Buru, but excludes Sulawesi (Celebes), Moluccas and Timor.

There are published records of 28 families with 158 genera and 742 species from the area, however the generic and particularly the species count could change pending confirmation of a number of species identities. The number of species in each family and every geographical unit is shown on the attached table. Tasmania is entered as a separate unit because of high number of endemic species and its close reflection of New Zealand faunal elements - families like Oeconesidae and Kokiriidae. Interestingly this move immediately puts the Australian fauna (in restricted meaning) in a different perspective. The total of Australian species, 318, is only about double the number of species from Tasmania - 164. Considering the land area, Tasmania is indeed very rich in species. The continental Australia is 110 times, New Zealand 4 times and New Guinea 11 times larger than Tasmania.

The New Zealand area includes Chatham, Auckland and Campbell islands; the New Guinea area incorporates the surrounding islands westward to Webers line and Solomon Islands in the east; the remaining island groups of New Caledonia, New Hebrides, Fiji, Lord Howe, Norfolk and others are all united under the Pacific Island heading.

Australia has the highest number of families, not unexpectedly due to its large size landmass stretching from temperate to tropical alpine and desert areas. Two families - Hydroptilidae and Leptoceridae are clearly dominant with 29% and 21% of the species respectively, leaving Hydrobiosidae with 11% in third place followed by Hydropsychidae with 7% and all others below 5% each.

The Tasmanian fauna is dominated by Leptoceridae and Hydrobiosidae with 18% each leaving Hydroptilidae and Conoesucidae in third and fourth place with about 10% each.

The New Zealand fauna presents a completely different picture - there, the family Hydrobiosidae has a clearly dominant position with 42% of all species, the Hydroptilidae has a rather insignificant 4% and Leptoceridae 6%, however, more dominant are "Sericostomatidae" (Conoesucidae 10%, Oeconesidae 9% and Hydropsychidae 8%). Glossosomatidae are absent.

The New Guinean fauna, admittedly not as well known as the three areas described above, show dominance in different families - Leptoceridae is the highest with 26% followed by Hydropsychidae 23%, Polycentropodidae 14% and Philopotamidae 13%. The Conoesucidae (= Sericostomatidae) species have not yet been recorded from the area.

Finally the smallest and most broken up area of Pacific islands is dominated by Leptoceridae and Philopotamidae each with 20%, closely followed by Hydropsychidae 17% and Hydrobiosidae 14%.

This summary presents us with a number of questions. First of all, how serious is the effect of usual collecting methods in obtaining useful and representative Trichoptera material. The first to come into mind is the family Hydroptilidae - a group consciously avoided and discarded from light trap material as too small to be of any value, or left only for the specialist; no wonder the number of Australian species went up from 8 to 92 in six years. Is this the reason for the extreme proportional differences with the other four areas?

What is happening with the family Glossosomatidae - is it really absent from New Zealand fauna? There is an indication that a score of undescribed species are existing in New Guinea material.

There is an interesting shift of accent in the family Leptoceridae - in Australia the family is dominated by Triplectides - Oecetis complex but in New Guinea the accent is on Triaenodes - Oecetis complex. This question has an unpublished answer - there are more than 40 undescribed species and this will change the perspective.

The Australian species of the family Stenopsychidae all belong to a single genus Stenopsychodes which differs from the typical Asian (Oriental) genus by absence of ocelli - but does the Australian genus really stop at Cape York Peninsula (it is not known from New Guinea). Where is the link between Australian and Oriental fauna, and what are their relationships?

In summary the available data to present day (1983) clearly shows that the SW Pacific area has definite area differences dominated by certain Trichoptera families. In Australia (continental) the fauna is dominated by Hydroptilidae, in Tasmania it is shared between Leptoceridae and Hydrobiosidae, in New Zealand it is family Hydrobiosidae, but in New Guinea - Pacific island fauna the dominance is shared by Hydropsychidae, Philopotamidae and Polycentropodidae; whereas the family Leptoceridae is common and rather dominant throughout all areas except New Zealand.

Distribution of Trichoptera in the SW Pacific area

Explanation of table: eg. 37 - no. of species of family in area
11.6 - % representation of family in area

Area	Australia	Tasmania	New Zealand	New Guinea	SW Pacific Islands
Total no. of sp.	318	164	151	121	35
Family					
Hydrobiosidae	37 11.6	29 17.7	67 41.6	4 3.3	5 14.2
Glossosomatidae	5 1.6	3 1.8	-	5 4.1	-
Hydroptilidae	92 28.9	17 10.4	6 3.7	4 3.3	2 5.7
Philopotamidae	10 3.1	9 5.5	10 6.2	16 13.2	7 20.0
Stenopsychidae	8 2.5	1 0.6	-	-	-
Polycentropodidae	6 1.9	6 3.7	7 4.3	17 14.0	3 8.5
Ecnomidae	17	7		2	1
Psychomyiidae			3	2	
(treat as one family)	5.3	4.3	1.9	3.3	2.9

Distribution of Trichoptera in the SW Pacific area cont.....

Hydropsychidae	22	9	13	28	6
	6.9	5.5	8.1	23.1	17.1
Chathamidae	1	-	3	-	-
	0.3		1.9		
Tasimiidae	3	4	-	-	-
	0.9	2.4			
Goeridae	-	-	-	-	-
					5.7
Limnephilidae	3	2	-	-	-
	0.9	1.2			
Lepidostomatidae	-	-	-	3	-
				2.5	
Oeconesidae	-	1	15	-	-
		0.6	9.3		
Kokiriidae	1	3	1	-	1
	0.3	1.8	0.6		2.8
Plectrotarsidae	2	4	-	-	-
	0.6	2.4			
Conoesucidae	7	17		-	-
Sericostomatidae			16		
	2.2	10.4	9.9		
Antipodoecidae	1	-	-	-	-
	0.3				
Calocidae	7	5	2	-	-
	2.2	3.0	1.2		
Helicophidae	2	5	2	-	-
	0.6	3.0	1.2		
Odontoceridae	4	-	-	-	-
	1.2				
Atriplectididae	1	-	-	-	-
	0.3				
Phlorheithridae	6	9	2	-	-
	1.9	5.5	1.2		
Helicopsychidae	5	2	5	-	-
	1.6	1.2	3.1		
Calamoceratidae	10	1	-	8	1
	3.1	0.6		6.6	2.8
Leptoceridae	68	30	9	32	7
	21.4	18.3	5.6	26.4	20.0

REVIEW OF VICTORIAN STIGMODERA (CASTIARINA) CHECKLIST

by Gordon Burns

For a number of years, Dr Barker of the University of Adelaide has been working on a revision of Stigmodera (Castiarina). From time to time he has published interim papers on new species and synonyms. His latest paper (1983) contains nine new synonyms, ten species resurrected from synonymy and thirty-one new species are described and illustrated in colour.

The paper contains 7 plates; 3 of them illustrating male genitalia and 4 showing 42 coloured illustrations of new and newly described species.

The following additions and alterations are necessary to my Check-list of Victorian Stigmodera (Castiarina) Vic. Ent. 13(6).

adealidae should read adelaideae

kitatae should read kiatae

new species:

alpestris Barker

subvicina Barker

supergrata Barker

variegata Barker

resurrected from synonymy and to be added to list:

marginicollis Saunders

synonyms to be omitted:

under australasinae L. & G. omit puerilis Kerremans

under cyanipes Saunders omit marginicollis Saunders

under dimidiata Carter omit leai Carter

omit sancta Carter

new synonyms:

under castelnaudi Saunders, after laportei Kerremans

add danesi Cbenberger

under cupricollis Saunders, after fairmairei Kerremans

add sancta Carter

under erythroptera (Boisdival), before nigroterminata Carter

add canaliculata Blackburn

under insularis Blackburn

add cognata Kerremans

under simulata L. & G., after distinguenda Thomson

add equina Blackburn

under subgrata Blackburn, after campestris Kerremans

add garrawillae Carter

under timida Kerremans

add puerilis Kerremans

under undulata (Donovan), after laportei Boheman

add opacipennis

remove from Victorian list:
grata Saunders

Reference

Baker, S. (1983). - New Synonyms and New Species of Stigmodera
(Castiarina) (Coleoptera: Buprestidae). Trans. R. Soc. South
Australia 107(3): 139-169.

SUBSCRIPTIONS ARE NOW DUE

PLEASE SUBMIT ARTICLES TO FILL IN WASTED EMPTY SPACES LIKE THIS!!!

CONGRATULATIONS TO A DESERVING ENTOMOLOGIST

January 1984 marked the beginning of Dr Arturs Neboiss' 30th year of involvement with the Department of Entomology, Museum of Victoria.

Dr A. Neboiss, born in Riga, Latvia emigrated to Australia in 1950. He had obtained a Master of Science from the Baltic University, Hamburg, Germany for work done on lizards. After starting as a cadet with the Plant Protection Board of Latvia he was later employed with the Institute of Geophysics, Baltic University, Hamburg as a laboratory assistant and draftsman.

Upon arriving in Australia, Dr Neboiss secured a position as Caretaker at St Catherine's School, Toorak before moving on to the Bureau of Mineral Resources as a cartographic draftsman. His involvement in the field of science began in 1952 when he was appointed Assistant Research Officer in the Department of Crown Lands and Survey where he investigated blood sucking insects as vectors of myxomatosis. Through this position he built up a working relationship with the Museum's Director, Mr Pescott, and the Curator of Insects, Mr Alex Burns. The then Assistant Curator of Entomology, Mr Charles Oke, retired at the end of 1953 and Dr Neboiss was appointed to the position in January 1954.

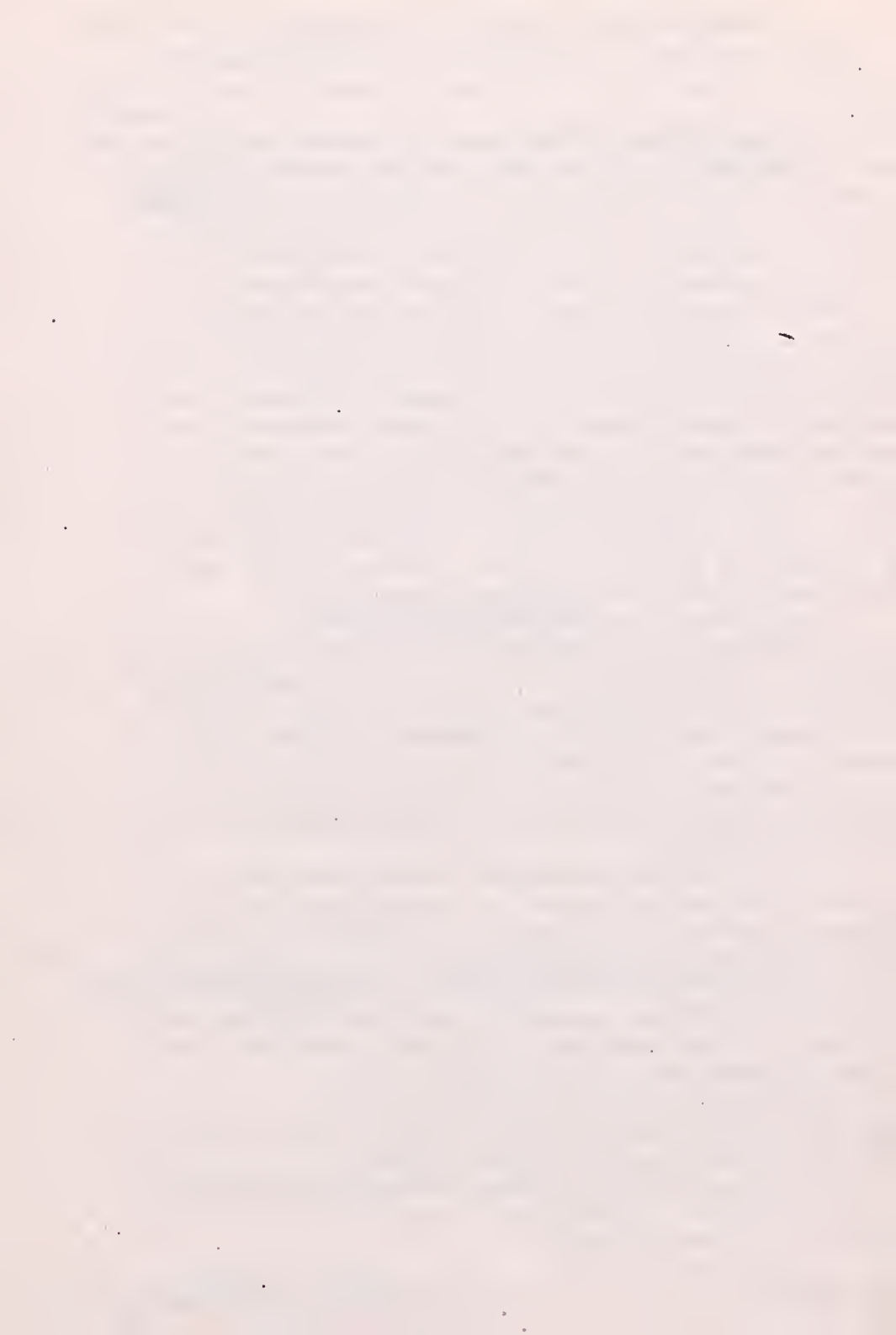
In 1956 Dr Neboiss was awarded a Master of Science from the University of Melbourne, Victoria for work on both myxomatosis and Elateridae. The following years to 1976 saw him appointed as Curator of Insects (June 1964) and attending International Symposia of Entomology, Plecoptera and Trichoptera in Moscow, Sweden, Canberra and Austria. He was also awarded visiting scientist's posts at the Max Planck Institute, Germany, the Zoological Institute, Leningrad and the Museum of Comparative Zoology, Harvard University, Mass, U.S.A.

In 1976 Dr Neboiss was awarded a PhD from Monash University, Victoria for his work on taxonomic and zoogeographic studies of Tasmanian Caddis-flies (Trichoptera). This publication and others done on the subject won him international recognition as an authority in the field of Trichoptera and he was elected as the Australian-New Zealand representative to the International Committee of Trichoptera at Lunz, Austria (1974) re-elected in 1977 at Reading, England and in 1980 at Perugia, Italy.

To date Dr Neboiss has 45 publications (more in press) covering such topics as Trichoptera, Elateridae (Coleoptera), Cupedidae (Coleoptera) and Acroceridae (Diptera).

We thank him for his contributions to entomology, congratulate him in his 30th year with the Museum of Victoria and wish him every success with his future research.

Ken Walker



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Hon. Treasurer	-	Gordon Burns, 3 Inglis St., Mornington Telephone - 75 7370
Hon. Editor	-	Ken Walker, Museum of Victoria, 71 Victoria Crescent, Abbotsford 3067 Telephone - 419 5200 (MV) 481 2043 (H)
Excursion Secretary	-	Peter Carwardine, 2a Victoria Rd., Malvern
Past President	-	Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659 Telephone - (057) 93 8230
Councillors	-	Mesdames Joy Burns, Mary Le Souef, Messrs David Crosby, L. Dunn, Ross Field, D. Stewart, A. Yen

DIARY OF COMING EVENTS

April, 13th	-	Parasitic Wasps, K. Waler
May, 18th	-	Council Meeting
June, 15th	-	Annual General Meeting

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VOL. 14 NO. 3



JUNE 1984

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 pm on the third Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S.)
Student, Associate.....	5.00 (Aust)	" 5.75 (U.S.)

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE GENERAL MEETING, 13 APRIL 1984

The President chaired the meeting, which started at 8.15 pm.

Apologies: T. New

Present: G. & J. Burns, K. Clark, D. Crosby, L. Dunn, R. & J. Field, M. Hunting, D. & J. Holmes, P. Kelly, M. LeSouëf, T. Morton, T. Owen, D. Philipatos, S. Smith, D. & N. Stewart, K. Walker, R. Vagi.

Minutes of the February meeting: accepted (J. Field/K. Walker)

Correspondence: Received (D. Crosby/R. Field)

Treasurer's Report: The Treasurer, G. Burns, stated that the credit balance, general account is \$2,430.24 and the memorial fund \$1249.27. There are 40 financial members. Received (M. LeSouëf/D. Stewart)

Editor's Report: K. Walker stated that articles were urgently needed for the Victorian Entomologist.
Received: (D. Holmes/R. Field)

Excursions: No excursions are planned. A winter excursion to the Abbotsford annex of the Museum was suggested, K. Walker to investigate.

Exhibits and Notes: 1. K. Walker exhibited a case of wasps relevant to his talk.
2. M. LeSouëf reported that Ocybadistes walkeri was still flying at Blairgowrie.
3. K. Clark commented on the wide distribution of Pieris rapae.

General Business: An enquiry was made with regard to collecting in National Parks and State Forests. Considerable confusion appears to exist particularly with regard to regulations in other states.

The President then introduced the speaker for the evening, Mr K. Walker whose subject was 'Parasitic Wasps'.

The meeting closed at 10.00 pm.

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SOUND PRODUCTION IN LYCAENID LARVAE AND PUPAE

by Peter S. Valentine Geography Department

James Cook University, Townsville. Q4811

Much has been written on the production of sound in lycaenid pupae and numerous species are known to produce distinct audible patterns (Common and Waterhouse, 1981; Dunn, 1983; Quick, 1984). There appears to be no prior record of lycaenid larvae also producing sound. While rearing larvae of Arhopala centaurus (Fab.) in Townsville during September 1982 I became aware that the final instar is capable of distinct sound production. The larvae from which the sound was first recorded were enclosed in a plastic margarine container and one specimen was resting on the underside of the lid. When the container was moved a drumming sound was noted and upon inspection it was discovered that a final instar larva was responsible. Experimenting with several larvae inside large plastic margarine containers the sound could be produced regularly. When exposed the larvae respond to lightly blown air; when enclosed in the container any slight tap on the container would set them off. The container clearly amplifies the sound as in completely exposed situations it is much more difficult to hear the drumming. It is also of interest that the attendant green tree ants appeared to be responsive to this sound; their movements seemed more rapid and jerky immediately the sound was produced. All three species of Arhopala which occur in Townsville produce very loud sound as pupae. On one occasion the sounds were recorded using very sensitive microphones and then played back through an amplifier. The response from the local community of green tree frogs was both instantaneous and remarkable! The sound is a combination of two short deep notes, repeated at intervals, something like the "brr"... "brr" sound of a telephone ringing in the headset. On the 15th November 1982 sound was also recorded from a prepupal Ogyris zosine (Hewitson).

It will be of interest to investigate which other species are capable of sound production as larvae. Other species from which I have recorded audible stridulation in the pupal stages include: Bindahara phocides Couchman, Jalmenus pseudictinus Kerr & Macqueen, Ogyris ianthis Waterhouse, Hypochrysops theon (Fruhstorfer), H. apelles (Fab.) and H. narcissus (Fab.).

References

- Common, I.F.B. and Waterhouse, O.F. 1981. Butterflies of Australia. Angus and Robertson, Melbourne.
- Dunn, K.L. 1983. A record of audible pupal stridulation for a species of the genus Hypochrysops C. and R. Felder (Lepidoptera: Lycaenidae) Victorian Entomologist. 13(2): 13-14.
- Quick, W.N.B. 1984. Audible stridulation in pupae of Hypochrysops digglesii (Hewitson) (Lepidoptera: Lycaenidae) Victorian Entomologist 14(1): 4-5.

NOTES ON THE LONGEVITY OF PHALACROGNATHUS MUELLERI MACLEAY

(Coleoptera: Lucanidae, Lampriminae)

'The Golden Stag'

by W.N.B. Quick

During my period of residence at Kuranda, North Queensland, the writer found it expedient to purchase a small portable generator, as much for the purpose of securing a reliable source of power for domestic lighting as it was for running entomological lights.

With thoughts of the recent discovery of a new cicada, almost simultaneously by Max Moulds and myself, and reports that a number of specimens of Phalacrognathus muelleri MacLeay had been taken at light traps only a few kilometers distant, one of the new clear-jacketed mercury-vapour lamps was purchased to replace the UV sunlamp which had been used close to the house.

Although two years of drought had taken its toll on the insect faunal balance within the rainforest, some success was more or less anticipated, and although a number of interesting insects were seen during the following monthly moonless cycles, it was not until April 4, 1983, that the first P. muelleri was taken. This was some two months after the period of what I had been led to believe was its maximum activity. The specimen was a magnificent example, freshly emerged, and one of the darker-coloured phases of the male.

The specimen was retained for subsequent filming in its natural habitat, and kept in a container partly filled with slightly dampened rotting wood. Anxious to retain its vigour during a period of inclement weather during which it was impracticable to attempt filming, the insect was offered banana, which it proved to relish. In the meantime, the light was run each suitable evening, and over the next few weeks three more specimens were taken - all males, all the dark phase. No females were sighted.

The original insect was handed over to another collector, who, it was understood, had a female insect to spare, and with which there seemed some hope at last of rearing the species in captivity. Alas, that was the last seen of the male, and no exchange female ever eventuated.

In July of that year, I had to travel to Melbourne by car, and elected to take the three individuals remaining. Each had its own container, and each was quite content to feed away at banana, with me. The containers were further enclosed in a plastic bag to prevent desiccation. The trip was, as far as the insects were concerned, quite uneventful. They continued to thrive (indoors) in Melbourne's winter, and on the return journey, it was not until a careless oversight - failing to dampen the rotten wood - that two weakened and subsequently died, apparently from the effects of dehydration. The third, and largest, remained active and in good health, "revving" in its container whenever the weather was warm in the evening.

In October, having been forced to sell the property at Kuranda and move back to Melbourne, the insect was still thriving on its staple diet, banana, and once more accompanied me on the trip south. The three insects, during the period I had them, exhibited behaviour as constant and individual as would be expected of much higher animal orders, and it was inevitable that they almost attained the status of pets, and names bestowed upon them. It was almost as inevitable that this last insect became 'Alexander' to the family.

At the present moment, 'Alexander' is beside me, romping around his container, having just ten days ago celebrated his first 'birthday', an event which may sound entomologically rather trivial, but for the fact that the insect has survived so long. This also raises certain questions in relation to the reputedly more frequent occurrence of the paler bronzy insects, which are not infrequently scratched and somewhat 'eroded' when taken. This has been attributed to fighting with other males, but anyone who has witnessed such lethargic encounters could hardly give this credence. It would seem more likely that under more natural conditions the insects, perhaps only the males, seek shelter under logs or in the soil during the drier part of the year, emerging the following summer 'wet' somewhat etched by soil salts and acids, as the paler 'phase'. In this regard, the female insects have been observed to retreat under logs each night after feeding, presumably to oviposit.

It is also interesting to note that while the species was, and perhaps still is, regarded as being invariably associated with logs and rotten stumps of the Queensland Red Cedar (Cedrela australis,

syn. Toona australis and Cedrela toona),¹ this tree has long since disappeared from the area in which the insects were taken. Several species of Acacia, at least one of which is known in the trade as "Acacia Cedar" are however frequent, the White Cedar (Melia azedarach) is plentiful on the Kuranda Range, while Albizia toona, also known in the timber trade as "Acacia Cedar", is not infrequent on the lower slopes of the range. Ample scope for either vernacular or botanical names have given rise to some confusion.

With the advantage of experience in feeding the adult insects, there seems little doubt that a mass of fallen fruit of Randia ovularis, only a few metres distant from where the mercury vapour light was situated, was responsible for luring the beetles to the clearing in which they were taken. And to complete the story as far as it is known, the insect flies just after dark, seldom later than 7.30 pm. The larva is reputed to be a more-or-less 'typical curl-grub' tapering markedly towards the posterior segments.

¹ Australian Rainforest Trees, W.D. Francis, Aust. Govt. Publ. Serv., Canberra, 1970. Nomenclatural changes by Chippendale, G.M. Melia azedarach L. var. australasica (A. Juss) C. DC. (Melia dubia Cav.), and Toona australis (F. Muell.) Harms (Cedrela toona Roxb. var. australis C. DC.).

² Stirling, S., Blackmountain Rd., Kuranda, Q. pers. comm.

Voucher specimen presented to the Entomology Dept. Museum of Victoria with data.

WANTED

Papered moths, eggs and pupae/cocoons of the moth family SATURNIIDAE. Specimens to be exchanged and all postal costs reimbursed. Rudolf Lampe, Laufertorgraben, D-8500 Nurnberg 20, West Germany.

NOTES AND RECORDS FOR SOME BUTTERFLIES FROM EASTERN AUSTRALIA,
1980-84.

Andrew Atkins, 45 Caldwell Avenue, Dudley, N.S.W. 2290

The following records include distribution and biological notes for butterflies collected or observed during excursions in the ACT and in the coastal and mountain heaths and woodlands of eastern NSW.

HESPERIIDAE

Euschemon rafflesia rafflesia (W.S. Macleay). Larvae found on Wilkiea sp. in April, 1983 at Seal Rocks, 14 km south-east of Bungwahl, NSW.

Netrocoryne repanda C. and R. Felder. Tharwa, Mt Tuggeranong and Tidbinbilla area, ACT. Larvae found on Kurrajong (Brachychiton populneum). The species is also common in the Newcastle area. Adult males can be found on hilltops in the morning.

Trapezites iacchoides Waterhouse. This skipper is known only from a few localities in woodlands from Gippsland to the NSW-QLD border. Several specimens were collected from Ku-ring-gai Chase in September 1983 and at Barrington Tops in December 1983. At Barrington the species was local but common where adults visited flowers or, during cloudy weather, settled on bare earth on the forestry tracks. It is interesting to note that there are differences between both the adults and early stages of these two NSW populations.

Trapezites phigalioides Waterhouse. This is a local montane species but was very common at Honeysuckle Creek, ACT in November and December 1982 where adults visited the flowers of Pimelia. The species was accompanied by Trapezites eliena (Hewitson), and Trapezites phigalia phigalia (Hewitson).

Trapezites luteus leucus Waterhouse. In the ACT larvae can be found feeding on the leaves of at least three species of Lomandra during sunny afternoons in mid-winter. The skipper appears to have a variable life-history duration, and adults can be found throughout the warmer months in open forests. Adults were collected by myself and Ted Edwards in mid-summer near Tantangara Dam, in the Kosciusko ranges, NSW.

Anisynta monticolae (Olliff). Not an uncommon species in the Brindabella Ranges, ACT where it flies in the damp gullies and on slopes of the sub-alpine sclerophyll forests. This skipper was also observed at Honeysuckle Creek, together with Oreisplanus minionga munionga (Olliff), Pasma tasmanica (Miskin) and Signeta flammeata (Butler). This is an additional location record for these skippers in the ACT as listed by Kitching et al., 1973.

Anisynta dominula draco Waterhouse. An adult male was reared from a larva found on snow grass (Poa sp.) at Barrington Tops in December 1983. The early stages closely agree with the description given by Common and Waterhouse, 1981 of a specimen apparently from Hampton, NSW.

Hesperilla malindeva Lower. Several larvae were collected from Gahnia aspera 20 km west of Grafton and Mt Mackenzie near Tenterfield, NSW in January 1984. The life-history of these specimens resembles that of specimens from central Queensland.

Hesperilla idothea idothea (Miskin). Larvae and pupae were common on Gahnia sieberana at Barrington Tops and near the Upper Styx River, NSW in the summer of 1983-84. Like the following species larvae are generally found on plants growing in dark gullies.

Hesperilla mastersi mastersi Waterhouse. The species is relatively common both in coastal heathland, wooded sandstone gullies and montane rainforest surrounding Newcastle and also inland in the Barrington area. The larval foodplant is usually Gahnia melanocarpa but also occasionally on a Gahnia resembling radula.

Hesperilla donnysa icaria(?). There is a paucity of records of this common skipper from the central NSW coast, but it is plentiful from the Lake Macquarie-Newcastle area and inland to the Singleton area. Larvae can be found on Gahnia nr. radula at these localities but at Port Stephens the foodplant is G. aspera and G. sieberana. The skipper also occurs in the Myall Lakes district.

Motasingha dirphia dea Waterhouse. Several larvae were collected from shelters on Lepidosperma viscidum and a fine-leaved plant identified for me as a species of Schoenus at Zig-Zag in the Blue Mts, NSW. The identification of this latter foodplant may need verification for it resembles the alternative foodplant of M. d. trimaculata at the Big Desert (my own records) and at the Little Desert, Victoria (Mr Keith Hateley, pers. comm.) and which I believe is Lepidosperma carphoides. I have also reared M. d. dilata from a very similar plant in the Kariong area near Gosford, NSW. Reared larvae of M. d. dea readily accepted and interchanged with both the forementioned foodplants despite the extreme difference in the character of the foliage.

PIERIDAE

Delias argenthona argenthona (Fabricius). This species is reported by Common and Waterhouse (1981) to be common (only)

north of the Richmond River, but it is certainly very common both inland and on the coast in central eastern NSW. The pierid at times out-numbers Delias nigrina (Fabricius) and the larvae this year have stripped bare many mistletoes (mainly Dendroiphthoe vitellina) along the coast.

NYMPHALIDAE

Agrynnina cyrila Waterhouse and Lyell. A female was observed at Honeysuckle Creek, ACT in November, 1982. Other Satyrids to occur at this locality include Heteronympha cordace cordace (Geyer), Oreixenica lathoniella herceus Waterhouse and Lyell, and Oreixenica kershawi phryne Tindale which is an additional locality for these species listed by Kitching et al. (1978).

LYCAENIDAE

Acrodipsas brisbanensis brisbanensis (Miskin). This butterfly is not uncommon in the near-coastal woodlands and coastal heaths in central NSW where it is found on hill-tops from Kariong to Port Stephens. A female was collected on October 1st, 1983 on the summit of Mt Kariong as it was pursued by two males. A few years earlier I collected a female of A. cuprea on the same summit, also being chased by males. The female on this occasion resorted to dropping to the ground to evade the 'attack'.

Acrodipsas cuprea (Sands). Like the former species, A. cuprea is commonly seen on hilltops surrounding the central coastal areas of NSW. Localities include Mt Kariong, Fraser Park, Caves Beach, Munibung Hill, Mt Sugarloaf, Nelson Bay and inland to Holydean. The species is also found from September to April, but seems to be a little more sporadic in its appearance during the year, though more plentiful than A. brisbanensis. Some further notes on the biology may be of interest: - I was able to induce a female of the Canberra form of A. cuprea to oviposit on a piece of bark placed in a glass container - but only after the introduction of a small colony of Crematogaster ants. Unfortunately the resulting 30 or so eggs failed to hatch. The mating flight of the coastal 'orange' form of this species is interesting. At Tingal Bay, NSW a freshly emerged female was seen to fly to two males settled 3 metres from the ground on the top of a wattle tree growing on the summit of a hilltop. Both males took flight to meet the approaching female, and one immediately mated with her as she settled on the wattle. After two minutes the pair separated, whereupon the female flew straight down the hill again toward a grove of gold wattles on the cliff-face, some 50 m away.

Hypochrysops epicurus Miskin. This is one of three species of the genus that I have found in the Newcastle region, the others being H. delicia delicia Hewiston and Hypochrysops ignitus ignitus (Leach). These latter two are quite common on hilltops but usually make their appearance at the summits in the afternoons especially in late spring and early autumn. H. epicurus seems to be confined to the mangroves where the adults keep to the upper canopy and usually remain settled until 'flushed' from the foliage. I collected 2 males and 2 females (though I saw many more) in early November, 1983 on the 'white' mangrove (Avicennia marina) along the Hunter River at Sandgate and Hexham. This locality is some 400 km south of Port Macquarie which is listed by Common and Waterhouse (1981) as the known southern limit of H. epicurus.

Ogyris barnardi barnardi. Probably the most common, but local of the seven species of the genus that I have collected in the Hunter River district. It occurs near Holydeen and Sandy Hollow in the Oenman area of the Upper Hunter. This is probably the southern-most locality so far recorded for this species in NSW. O. barnardi flies around a grey-leafed mistletoe (probably Amyema quandang) that grows on wattles.

Ogyris ianthis Waterhouse. Few localities are recorded for this species. The Lycaenid flies in late spring and later summer at Caves Beach and near Fraser Park both on the eastern side of Lake Macquarie. One male was collected on 12th November 1983 at Munibung Hill in the southern suburbs of Newcastle.

Candalides cyprotus cyprotus (Olliff). Two females were collected about 20 km north of Braidwood, NSW. They were found flying around a prostrate species of Grevillea, which was later confirmed as a larval foodplate at this locality (Mr P. Samson, pers. comm.).

Candalides heathi alpinus Waterhouse. Two colonies were found at Mt Ainslie and Black Mountain, ACT, where larvae and eggs were found on Parahebe perfoliata. The larvae were reared on Plantains at home and adults emerged the following Autumn and Spring.

References

- Common, I.F.B. and Waterhouse, O.F. (1981).- "Butterflies of Australia". Angus and Robertson: Sydney.
- Kitching, R.L., Edwards, E.O., Ferguson, D., Fletcher, M.B. and Walker, J.M. (1978).- the Butterflies of the Australian Capital Territory: J. Aust. ent. Soc. 17: 125-133.

MINUTES OF THE COUNCIL MEETING, 18 MAY 1984

In the absence of the President and Vice-President, P. Kelly chaired the meeting, which commenced at Bpm.

Apologies: P. Carwardine, R. Condron, L. Dunn, D. Johnson, M. Le Souëf, D. Stewart.

Present: G. & J. Burns, D. Crosby, M. Hunting, P. Kelly, T. New, K. Walker, A. Yen.

Minutes of the March Council meeting: passed (G. Burns/K. Walker).

Correspondence: detailed and received (K. Walker/M. Hunting).

Treasurer's Report: G. Burns reported an overall credit balance of \$2446.01, together with the Memorial Fund of \$1249.27. There are 51 financial members. Received (M. Hunting/A. Yen).

Editor's Report: K. Walker noted that enough material was in hand for the next issue, but more articles would be welcome.

Excursions: Possible venues for a winter excursion were discussed. The Museum of Victoria, Entomology Department was selected and, as the Society will have to pay for a security guard for most of a day, it was proposed (J. Burns/M. Hunting) to levy a charge of \$2/member. Possible dates would be announced at the AGM.

General Business:

1. The sequence of the June meeting, to include general business, the Memorial Award Presentation, election of offices and Presidential Address, was discussed.
2. The Secretary requested permission to circulate the revised conditions of the Le Souëf Memorial Award to potentially interested Societies and individuals. Granted.
3. Incoming Offices: Council's nominees for the 1984-1985 Offices are:
President: P. Carwardine
Vice-President: R. Condron, D. Johnson
Secretary: T. New
Treasurer: G. Burns

Excursions Secretary: P. Carwardine
Editor: (vacant)
Councillors: J. Burns, M. Le Souëf,
D. Crosby, L. Dunn, R. Field, D. Stewart.

The Chairman expressed the Council's appreciation to the retiring Editor (K. Walker) for the work he had done in producing the **Victorian Entomologist**.

4. Tentative programme for the remainder of 1984 was discussed.

August: Dr R. Field, 'The European Wasp'

October: Dr T.R. New 'Impressions of Papua New Guinea Lepidoptera'.

December: Members night (Advance call for exhibits, slides, etc.).

5. The Secretary drew Council's attention to recent expansions of a housing estate abutting one of the few habitats of Hesperilla flavescens at Altona.

6. Future of the **Victorian Entomologist**. K. Walker showed members a letter relevant to the production of the **Victorian Entomologist**, which raised a number of important aspects of scientific responsibility and refereeing procedures. After considerable discussion, centering on validity of publication of articles included in the **Victorian Entomologist**, Council passed the following resolution (J. Burns/M. Hunting). "In view of increasing concern over contents of recent issues of the **Victorian Entomologist**, Council recommends that the cover words 'Journal of...' to be replaced by 'News Bulletin of...', and the disclaimer be increased in emphasis to correspond with that used by the Entomological Society of Queensland". Carried nem. con.

7. Comments were made on possibilities for streamlining general business at meetings, mainly as a courtesy to the Speaker. It was suggested that exhibits and nature notes be produced after the main business of the evening.

8. The Secretary requested permission to reproduce an ENTRECS map in a forthcoming book on Insect Conservation. Granted.

The meeting closed at 9.30pm.

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CONSTITUTIONAL AMENDMENTS

In accordance with the Constitution, notice is given of the following proposed amendments, designed to eliminate the implication that the Victorian Entomologist is a citable publication.

SECTION 5. In the sentence including '... shall receive the Society's publication, the Victorian Entomologist...' replace 'publication' by 'News Bulletin'.

SECTION 7 (d). Change '...the publication of the Victorian Entomologist...' to '... the production of the Victorian Entomologist...'.
.

SECTION 9.

Secretary (d). Change 'material for publication in ...' to 'material for circulation in...'.
.

Editor:

(a). Change 'Prepare and publish the Victorian Entomologist' to 'Prepare and distribute the Victorian Entomologist'.

(b). Change 'Ensure that the cost of publication..' to 'Ensure that the cost of production...'.
.

(e). Change 'Coopt a Publications Committee' to 'Coopt advisors'.

(f). Change 'Together with the Publications Committee, accept responsibility for ... of the Journal ...' to 'Together with advisors, accept responsibility for ... of the Victorian Entomologist...'.
.

BYE LAWS (to be considered by Council)

1. Change 'There shall be a Society publication' to 'There shall be a Society News Bulletin'.

2. Change '... the publication of the Journal' to '... the production of the News Bulletin'.

3. (Twice) Change 'Journal' to 'News Bulletin'

4. Change '... publication in the Journal' to '... inclusion in the News Bulletin'.

ZOO LE SOUËF MEMORIAL AWARD

1. The purpose of the Award is to recognise the very substantial role played by amateurs in development of knowledge of our insect fauna, this is to be interpreted in the broadest sense.
2. The Award is to be made for contributions to entomology by amateurs in Australia. Such contributions may comprise published papers and notes, broadcasts, newspaper articles, talks to Societies and/or amateur groups, or may be less tangible, such as a substantial record of help to others or public relations involving entomology.
3. No more than one award shall be made in each calendar year. Nominations may be made at any time, but it is expected that the Committee will meet on the 3rd Friday of November each year to review applications and recommend an award, if any, to the Council of the Society. Nominations received after 1st November each year may have to be deferred until the following year.
4. A nomination may be made by any individual or group of people and should be submitted to the Secretary of the Society, who will acknowledge its receipt and circulate it to members of the Committee.
5. A nomination will remain current for three successive calendar years or annual meetings of the Committee, unless an award is made to that nominee, and additional information may be provided to supplement the nomination at any time during this period. Such shall not be considered to constitute a new application. After three years, a candidate may be nominated afresh. No person may receive the award more than once in a ten year period.
6. A nomination shall give the Committee sufficient information to assess the nominee's worthiness for receipt of the Award. It should include:
 - a) The name and full postal addresss of both nominee and nominator.
 - b) A clear statement of the grounds on which the nomination is being made. This should include (i) the period over which the contribution has been made (ii) the details of the contribution, lists of publications (etc.) (iii) comments on allied activities such as involvement in naturalist or conservationist groups and help to other entomologists, collections made (etc.) and (iv) a declaration that these activities have been taken in an amateur capacity. Copies of publications (on loan) could be useful.
 - c) A brief resume/curriculum viate of the candidate.

Submit to: Dr T.R. New, Hon. Sec. ESV, Department of Zoology,
La Trobe University, BUNDOORA, Victoria 3083

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OFFICE BEARERS

President	- Peter Carwardine, 2a Victoria Road, Malvern Telephone - 211 8958
Vice-Presidents	- D. Johnson, 7 Eranimil Drive, Mt Eliza Telephone - (03) 787 3013 - R. Condron, 96 Shannon St, Box Hill Nth Telephone - 898 6300
Hon. Secretary	- Dr Tim New, Zoology Dept, LaTrobe Uni., Bundoora Telephone - 718 1007 (H) 479 2247 (Uni)
Hon. Treasurer	- Gordon Burns, 3 Inglis St., Mornington Telephone - 75 3730
Hon. Editor	- Ken Walker, Museum of Victoria, 71 Victoria Crescent, Abbotsford 3067 Telephone - 419 5200 (MV) 481 2043 (H)
Excursion Secretary	- Peter Carwardine, 2a Victoria Rd., Malvern
Past President	- Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659 Telephone - (057) 93 8230
Councillors	- Mesdames Joy Burns, Mary Le Souëf, Messrs David Crosby, L. Dunn, Ross Field, D. Stewart, A. Yen

DIARY OF COMING EVENTS

June 15th	- Annual General Meeting
July 20th	- Council Meeting

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VOL. 14 NO. 4



AUGUST 1984

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

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ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE ANNUAL GENERAL MEETING, 15 JUNE 1984

The President opened the meeting at 8.15 pm, with special welcome to Keith Hateley, a Life Member of the Society.

Apologies: T. Morton, N. Quick, A. Yen

Present: G. & J. Burns, D. Crosby, L. Dunn, B. and C. Eden. I. Faithfull, R. and J. Field, F. Hallgarten, K. Hateley, D and J. Holmes, M. Hunting, D. Johnson, P. and M. Kelly, M. N. D. and J. Le Souef, R. Lilley, R. Macauley, S. Smith, D. and N. Stewart, K. Walker.

Minutes of the 1983 AGM passed (K. Walker/J. Burns)

Correspondence: Detailed and received (D. Crosby/M. Le Souef)

Treasurer's Report: G. Burns presented the Report: received (D. Stewart/D. Holmes)

Editor's Report: K. Walker, as retiring Editor, expressed his thanks for help received in producing the Victorian Entomologist during the year, and asked for further articles for forthcoming issues. M. Le Souef proposed a vote of thanks to Ken for his work as Editor: carried by acclamation.

Excursions: K. Walker gave details of the indoor excursion to the Entomology Department of the Museum of Victoria on 23rd June.

General Business: i. Constitutional Changes. The Secretary outlined the rationale behind the changes proposed in the recent Journal (14, 3). After considerable discussion, it was proposed that they be adopted (P. Kelly/M. Hunting): carried, mem. con.
ii. Insect Export. The Secretary informed the meeting that the controversial Customs Regulation 13A had recently been replaced by the Wildlife Protection (Regulation of Exports and Imports) Act 1982, and indicated how this may work.

- iii. I. Faithfull exhibited a small box of beetles, including Xylotrupes gideon from NSW, and Novapus sp.
- iv. D. Johnson commented on the exceptional abundance of Rhipidicera femorata on blossom on the Mornington Peninsula earlier this year.

Presentation of the Le Souef Memorial Award

The President announced the presentation of the first award to Mr Keith Hateley, a life member of the Society, and who is well-known for the help he has given to many members (and other entomologists) over a considerable period, and invited Mary Le Souef to make the presentation. Mary expressed her family's appreciation to the Society for instituting the Award, and outlined the long association of Keith Hateley with entomology in Victoria. In his reply, Keith commented on how much pleasure this award gave him, as a reminder of many happy occasions collecting in the past.

In stepping down from the Chair, P. Carwardine thanked the officials and council for their help to the Society during the year.

P. Kelly proposed a vote of thanks to the retiring president which was carried by acclamation.

P. Kelly then took the chair to act as returning officer during election of Offices and Council. The following elections were made:

President:	P. Carwardine
Vice Presidents:	R. Condron, D. Johnson
Secretary:	T. R. New
Treasurer:	G. Burns
Editor:	<u>VACANCY</u>
Excursions Secretary:	P. Carwardine
Council:	J. Burns, M. Le Souef, D. Crosby, L. Dunn, D. Holmes, M. Hunting, D. Stewart, K. Walker.

P. Kelly then invited P. Carwardine to give his Presidential Address on 'Entomological Literature'. After a talk tracing much of the history of entomological publishing, illustrated by both slides and books, he was thanked by M. Le Souef.

The meeting closed at 10.15pm

OBSERVATIONS FROM THE VICTORIAN HIGH PLAINS

Mark M. Hunting, 29 Paloma St., South Oakleigh 3167

During the week between Christmas 1983 and the new year I joined a walking party of twelve to hike from Harrietville, across the Razorback to Falls Creek, a distance of over 50 kilometres along alpine trails.

In one word the weather was superb for the whole time. Fresh water was plentiful from sparkling mountain streams and the wetter-than-average spring had clothed the high plains with fresh growth.

The Bungalow spur from Harrietville to Federation Hut is a well graded walking track, taking up to three hours to ascend. Near the top of the trail Argynnis cyrila was plentiful, and on the hill behind the hut Candalides consimilis goodingi was flying.

From Federation Hut an assault was made on Mt Feathertop (Victoria's second highest peak) before spending the first night at the Melbourne University Mountaineering Club (MUMC) Hut - a distinctive dome structure at the top of the North-West Spur.

Vanessa itea was seen at the summit of Mt. Feathertop and was seen flying at all altitudes.

The next day we walked from the MUMC Hut, across the Razorback to Hotham Heights, then along the Alpine Walking Track to Dibbins Hut on the Cobungra River.

Graphium macleayanum was common on the ridges, but the Satyrinae were disappointingly absent from the swampy environs at Dibbins Hut. I expect that cordace, kershawi and correae (to mention a few) would be on the wing later in the season.

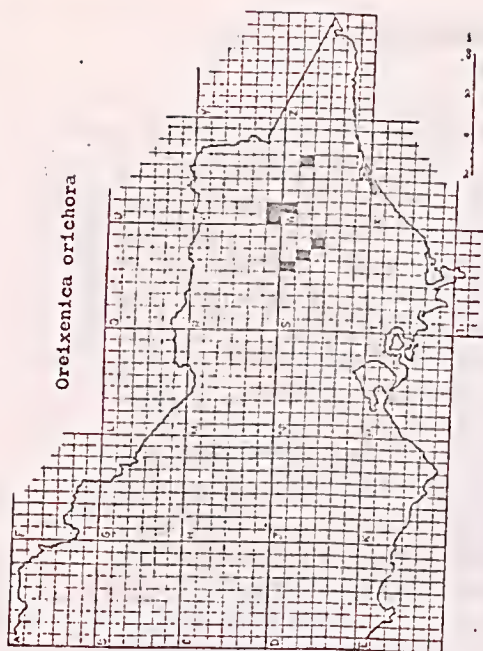
On the third day we walked from Dibbins Hut to the Tawonga Huts - a pretty spot at the confluence of several streams and mossy soaks. It was here that freshly emerged Oreixenica orichora were first seen.

Most of the walking on this day was across the open snow plains. Cattle on these plains have churned the bogs and watercourses into stinking 'cess pools' and obviously contribute to the swarms of flies which bring so much unpleasantness to otherwise unspoiled natural beauty. It is a pity that one of our most valuable natural resources, being water, is polluted from the top of the State by such uncontrolled destruction at waterholes.

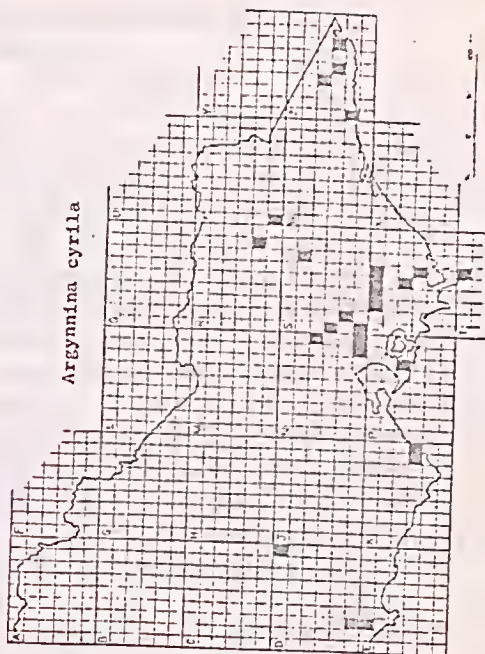
The final days walk from Tawonga Huts to Falls Creek concluded a most refreshing four day hike through some of the State's most picturesque scenery.

The following ENTRECS maps are for the abovementioned species.

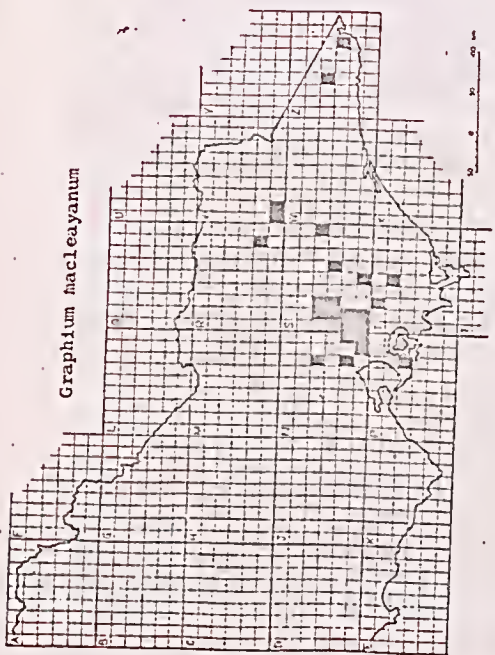
Oreixenica orichora



Argynnina cyrila



Graphium hacleayanum



Candalides consimilis



COLLECTING BUTTERFLIES IN WESTERN AUSTRALIA

By Tony Morton

25 December 1983 - 12 January 1984

When my family and I went to stay with friends in Bunbury, Western Australia, at Christmas 1983, I was told that this was not a good time for collecting there, and this proved to be quite true. The time for wild-flowers was also past, although the Christmas Tree, (Nuytsia, reminding me very much of Exocarpos in habit and appearance, except for the masses of orange flowers, of course), some huge Banksias and some Kangaroo Paw were still in bloom. The richness and variety of the West Australian bush amazed and delighted me, and the bird-life was also fascinating, but, except for the many tiny, crab-like spiders there was not much in the way of insect life. But then I only went to the more inhabited spots - Bunbury itself, Dunsborough and Cape Naturaliste Bay, and the South coast between Walpole and Albury. There follows a list of species taken, with a note where felt appropriate.

Hesperilla chrysotricha chrysotricha

Dunsborough Golf Course
(found as small larvae on
Gahnia)

Taractrocera papyria agraulia

Pieris rapae rapae

Danaus plexippus plexippus

Geitoneura minyas minyas

Geitoneura klugii klugii

Heteronympha merope duboulayi

Bunbury
One seen
Common
Startlingly bright sub-
species
Very common on sand-dunes

Vanessa kershawi

Junonia villida calybe

Jalmenus inous

A very few found on C.
Naturaliste, feeding on
Nuytsia

Candalides hyacinthinus hyacinthinus

Found at Dunsborough (C.
Naturaliste) and Nornalup
(on South Coast) on
Cassytha

Neolucia agricola occidens

Lampides boeticus

Zizina labradus labradus

Flying round Wisteria

COLLECTING IN THE NORTH EAST MOUNTAINS

By Oavid R. Holmes

On our February trip to Bright this year I collected around Bright and the surrounding mountains. On February 11 we went to Mt. Hotham. At Brandy Creek I saw a few Oriexenica corrae, and an odd O. lathoniella herceus, but as they were freshly emerged, there were no females present, so I assumed that it was a later season generally from other years I had collected there. I also collected at Boggy Creek, just outside the National Park, and either collected or sighted the following:

Orieplanus mumionga

Geitoneura klugi

Heteronympha penelope

H. merope

few very worn

H. cordace

Oriexenica lathoniella herceus

Zizeeria otis labradus (many)

Neolucia hobartensis

Pieris rapae

Vanessa kershawi

Junonia villida calybe

Falls Creek Area

On February 15 we went to the Falls Creek area, via Mt. Beauty. At Howmans Gap we found Anisynta monticolae, Vanessa itea, V. cardui, Zizeeria otis labradus, Oriexenica corrae, and Heteronympha solandri. As it was only about 4 pm, I was amazed to find a small Hepialid moth, Fraus musca, flying through the grass. It was interesting to see so many as I had only collected a couple previously. I sent notes concerning the flight, as well as a few specimens, to Or Ebbe Schmidt Nielson of C.S.I.R.O., who is doing a revision of the Fraus genus. In the revision of the Australian Fraus, of 28 species described, 15 species were new. Going back to Howmans Gap I found this same moth flying through the grass where it had not been flying earlier in the day.

Mt. Buffalo

On February 20 I went to Mt. Buffalo, and contacted the National Parks Service before going out to collect. I collected, or sighted Anisynta dominula drackmophora, Oriexenica corrae, Zizeeria otis labradus, Vanessa kershawi, Danaus chrysippus (migrant), Neolucia agricola, Geitoneura klugi, Heteronympha solandri, Oriexenica lathoniella herceus, and noticed many Uthesia pullchelloides, one of the small moths that I collected at the summit.

On February 22 we went back to Boggy Creek, and found that the butterflies which were not common on our earlier trip had now fully emerged. Also a small green and yellow Geometrid - Euloxia gratosata. Perornatus munionga had emerged fully, and there were females flying. However there were still no Anisynta dominula flying in this area, where in other years they have been quite common.

I noticed, with some disappointment, the huge ski lodges being built at Mt. Hotham, one already 4 or 5 stories high, with more to go on top. Quite a lot of change since our first trip in 1955, in our new F.J. Holden. The solitary building then on the mountain was the Chalet. The roads are much wider now, but no doubt, the 1000 feet drop from Mt. Blowhard to the bottom, is still the same distance - only now it is in metres!

THE BUDDLEIA'S OF HARRIETVILLE

By David R. Holmes

In February of this year we had 2 weeks holiday in the Bright area. Many years ago, someone in Harrietville had planted Buddleia bushes in the old slag heaps left by the gold mining dredge, which operated in the early part of the century. The slag heaps cover perhaps 8 or 10 hectares, and for our previous two collecting trips in that area it has yielded many things on that 20 to 30 large patches of Buddleia. Vanessa kershawi, Vanessa itea, Junonia villida calybe, Zizeeria otis labradus, Signeta flammeata, Dispar compacta, Comocrus behri (Agaristidae) and, loveliest of all, Delias harpalyce and Delias aganippe were quite common. Just on the edge of the Ovens River a large Gum tree, covered in mistletoe, was the host plant for the Delias. It was a huge breeding colony of Delias aganippe, with a few Delias harpalyce. Also Ogyris were noticed flying up on the tree trunk. This year when we arrived, there was no gum tree; it has been cut down to make way for a ski lodge.

You all may know of places that were once good collecting areas but now, due to progress, have ceased to exist. I can name many such places where, after the P.M.G., S.E.C. or C.R.B. had finished, there were no trees or anything else for insects to breed on. I came home from this trip disappointed, not because I had failed to collect a few Delias, but because their population had been wiped out. I am sure our Australian environment is more sensitive than we fully realise, for once lost, much of it will never fully recover.

I am told that other large buildings will soon be built on the slag heaps of Harrietville, so now I am concerned about the Buddleia themselves. The Buddleia of Harrietville will never be the same without the beautiful Delias, but even now they may be fighting for their own lives.

THE TROBRIANDS

'At that age of transition when the older child prepared itself for community acceptance as a young adult, the girls especially delighted in making themselves beautiful. Some of them would arm themselves with pliant canes, which they bent into such a shape as might have formed the frame of a primitive tennis racquet. Thrust carefully into a web of the huge spider webs; the frames became effective butterfly nets, with which the screaming children pursued the giant birdwing butterfly (O. priamus), green and black and gold, that swooped in joy above the treetops but came, warily enough, to feed on flower nectar from the bushes in the columned groves of coco-palms, or there flirted with the sober, fawn-brown females, even larger than themselves; ten inches or a foot across.

When she caught a butterfly it was the joy of the girl to lasso it's fat golden body with a hair, with which she tethered it to her head and walked proud and happy, with the living glory in constant motion about her, a hovering fluttering living jewel on an invisible tether.'

• Many thanks to Mrs Jean Brown who, for the enjoyment of the members, gained permission from the author, Olaf Ruhen, to produce this except from his book, "Scan the Dark Coast".

MARCH IN MY GARDEN

By Mrs. Jean Brown

We had a storm this morning, then the sun came out and with it all the lovely flying things.

Dragonflies are abundant this year, red ones and blue ones, large ones like helicopters, small ones so fragile one wonders how they can fly and an another with lovely deep yellow with brown spots.

An Admiral (V. itea) zooms by and two graceful glasswings glide in delicate ballet.

Orange shield bugs on the hibiscus, some newly hatched, some laying eggs in a neat little reddish collar around the stem.

A magnificent eggfly (H.b. nerina) gorges himself on the Buddleia flowers, in company with orange darts (A. cephrenes), a cabbage white, a crow, a triangle and T. peron.

Triangles (G.s. choredon) hunting a large female Emperor (P.p. sempronius) away from "their" Camphor laurel tree, one does not know why, it's a huge tree with room for all. No eggs on the Caesalpinia laid by Mrs Emperor as yet.

In the grass under the trees, a common brown female (H.m. merope) selects a blade of grass on which to lay her eggs.

An urgent crow (E.c. corina) laid eggs on the Allamanda creeper! Will watch if the larvae feed there, as three have hatched already. Last year a crow laid eggs on my pink frangipanni tree, the larvae grew, pupated and emerged successfully.

A chequered swallowtail (P.s. stheneleus) rare visitor, comes to rest on the Elderberry tree, with Phaedyra shepherdii.

Two male orchards searching the citrus trees - hoping for a newly emerged female? Meantime, a female orchard flies into the garden next door, stopping to lay a couple of eggs on the lemon tree.

Two D. nigrina (males) have a great chase, up and down, in and out of trees.

A mating pair of meadow argus (J. calybe) start up from the grass in front of me, lumber up, then plop down in the grass again.

Two C. absimilis are flying high on the photinea, tasting the last few blooms. A northern jezebel flies up to chase them away and a couple of common pearls are also hunted away.

Three wanderers (D. plexippus) glide around me, glowing in the afternoon sun. The eggfly comes back for another taste of Buddleia.

Friday, March 30th, was the "Day of the Jezebels" (D. nigrina) as 82 flew past in just five minutes, one, two three at a time, flying east to west. With them a lone D. argenthona.

There are five crows on the stump of a pruned Crotalaria, seem to be drugged by either the sap or torn bark, all males.

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With Sliding Glass Tops would
suit beginner or could be
converted for wall displays.

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MINUTES OF THE COUNCIL MEETING, 20 JULY 1984

Apologies: D. Johnson, T. New, D. Stewart, D. Crosby.

Present: G. & J. Burns, P. Carwardine, D. Holmes, M. Hunting, M. Le Souef, P. Kelly, K. Walker.

Minutes of the May Council meeting: passed (D. Holmes/J. Burns)

Correspondence: Detailed and received (G. Burns/J. Burns)

Treasurer's Report: G. Burns reported an overall credit balance of \$2556.99 together with the Memorial Fund of \$1374.67. There are 57 financial members. Recieved (D. Holmes/K. Walker)
It was moved (M. Hunting/M. Le Souef) and passed that a typed reminder notice be included in the News Bulletin for unfinancial members.

Editor's Report: K. Walker reported that adequate material was at hand for the next issue.
It was moved (M. Hunting/K. Walker) that prices be obtained for the commercial typing of the August and October issues. Passed.
It was moved (K. Walker/G. Burns) that the titled page be changed to News Bulletin at the beginning of Vol. 15. Passed.

General Business:

1. The speaker for the August meeting will be Mark Hunting on "The Kokoda Trail".
2. The resignation of N. Quick was received with regret. P. Kelly to write accepting this resignation.
3. P. Carwardine raised the issue of forming a Junior Entomological Club. Considerable discussion took place. A suitable leader seemed to be the most important requirement. It was resolved to call for volunteers at the August meeting.
4. G. Burns raised the issue of uncompleted projects. The distribution of our advertising leaflets and the completion of display boxes. Members offered to supply mounted specimens for this purpose.

The meeting closed at 10.10 pm.

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OFFICE BEARERS

President	- Peter Carwardine, 2a Victoria Road, Malvern Telephone - 211 8958
Vice-Presidents	- D. Johnson, 7 Eranimil Drive, Mt Eliza Telephone - (03) 787 3013 - R. Condron, 96 Shannon St, Box Hill Nth Telephone - 898 6300
Hon. Secretary	- Dr Tim New, Zoology Dept, LaTrobe Uni., Bundoora Telephone - 718 1007 (HM) 479 2247 (Uni)
Hon. Treasurer	- Gordon Burns, 3 Inglis St., Mornington Telephone - 75 3730
Hon. Editor	- Position Vacant
Excursion Secretary	- Peter Carwardine, 2a Victoria Rd., Malvern
Past President	- Peter Kelly, Lot 6, Dockery's Rd., Tallarook, 3659 Telephone - (057) 93 8230
Councillors	- Mesdames Joy Burns, Mary Le Souef, Messrs David Crosby, L. Dunn, D. Holmes, M. Hunting D. Stewart, K. Walker.

DIARY OF COMING EVENTS

August 17th	- The Kokoda Trail, M. Hunting
Sept. 21st	- Council Meeting

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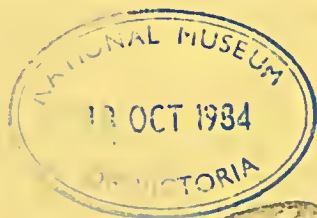
Ento
P595-701
V645

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The President opened the meeting at 8.10 pm.

- Apologies:** T.R. New, K. Walker
- Present:** L. Bunston, G. & J. Burns, P. Carwardine, K. Clark, D. Crosby, I. Faithfull, D. Gooding, D. & J. Holmes, M. Hunting, P. Kelly, S. Lazarus, M. LeSouef, R. Pengelly, D., N., & C. Stewart, P. Taylor.
- Minutes:** As no General Meeting had been held in June, no minutes were read.
- Correspondence:** From N. Quick: resignation from the Club.
To N. Quick: acceptance of the above.
From D. Johnson: resignation from the Council.
received (G. Burns/J. Burns)
- Treasurer's Report:** G. Burns presented the following report:
General Account \$1123.12
Term Deposit \$1500.00
Zoo LeSouef Memorial Fund \$1374.67
There are 57 financial members
received (M. LeSouef/D. Crosby)
- Editor's Report:** K. Walker forwarded a written report stating that due to a breakdown of the word processor, the August issue of the Journal would be about two weeks late in distribution. Ian Faithfull is considering the possibility of his taking the position of Editor.
received (J. Burns/M. LeSouef)
- Excursions:** It was decided to hold an excursion in the Lancefield district on Saturday 10th November.
- Exhibits and Notes:** Ian Faithfull exhibited specimens of the scarab beetle Heteronchus sanctae-helanae Blanch. and Metanastes vulgivagus Ollif.
Peter Kelly showed black and white prints of various stages of paropsine beetles.

David Gooding noted that he had seen the Blue Triangle, Graphium sarpedon choredon (Felder) flying in Darwin.

- General Business:
- (1) Council was directed to discuss possible nominations for the position of Vice President.
 - (2) Council is to further discuss the formation of a Junior Club.

Speaker: Mark Hunting showed a series of excellent colour slides of his walking trip across the Kokoda Trail in Papua New Guinea which he undertook, with six others, in May 1982. The details of the butterflies seen on the trip were written up by Mark in Vic. Ent. 13(5).

The meeting closed at 9.50 pm.

PLEASE SUBMIT ARTICLES TO FILL EMPTY SPACES LIKE THIS

HAWAIIAN INSECTS AND THEIR ORIGINS

R.H. Fisher, 21 Seaview Road, Lynton South Australia 5062

It has long been known that the Hawaiian fauna, because of its comparatively recent origin and its marked isolation from other land masses, presents a unique opportunity for the study of insect dispersal and evolution. The following brief account of some of the more unusual aspects of the insects of the Hawaiian Islands and their possible origins is based on a series of superbly presented and clearly labelled displays which have been mounted in the public section of the Bernice P. Bishop Museum, Honolulu. Additional data arose from discussions with the Museum's Honorary Entomologist, Monsignor J.C. Riotte, and from E.C. Zimmerman's "Insects of Hawaii" Vol. 1 (University of Hawaii Press, Honolulu, 1948). I am grateful to all these sources for a fascinating experience.

The entire Hawaiian Archipelago consists of a series of islands, reefs and shoals extending in a NW-SE direction for almost 3000 km, and lying roughly in the middle of the North Pacific Ocean. The six main islands lie relatively close in the SE of the series and about 2300 km from the equator, or between 18° N and 22° N latitudes. Geological studies indicate that each island in the series arose as a result of volcanism and was slowly built up over a submarine "hotspot" on the Pacific floor. As consolidation above the sea took place the volcanic vent was closed off and as a result of sea floor spreading the island was moved slowly in a NW direction. The effects of degradation overtook those of the building up process, and both marine and aerial erosion slowly but inevitably reduced the older islands to plateaux just below the level of the sea. Finally, the growth of coral producing organisms on these submarine plateaux raised the surface of the older islands again, forming the long chain of reefs and atolls which lie to the NW of the six younger or main islands.

Some of the younger islands in the SE are still actively volcanic. For the most part they are, or have been, well vegetated until the advent of European man and his agriculture. Most areas receive an abundant rainfall; Mount Waialeale on the island of Kauai, for example, has recorded 15,500 mm of rain in a single year



and is regarded as one of the wettest places on earth. Extreme precipitation such as this, coupled with the porous nature of the volcanic rocks, is largely responsible for the dramatically sculptured topography which is evident in some of the more mountainous parts of the main islands. On the other hand, in some of the lowland areas precipitation may be somewhat less than abundant in some years and annual recordings as low as 120 mm are known.

The geological age of the archipelago has been difficult to estimate. However it is generally agreed that the islands were formed during the Tertiary Period. A maximum age of about 70 million years is assigned to the older components and a minimum of 1 to 10 million years for the main islands. Thus it is probable that most of the contemporary orders of animals and plants were well established on other land masses before these islands were formed.

This archipelago is the most isolated of all island groups. To the east lies some 3000 km of ocean, unbroken by any land mass until the west coast of the North American continent is reached. The Aleutian Islands lie roughly the same distance to the north of the main islands. To the south and west the vast Pacific Ocean is dotted with chains of tiny islands, reefs and atolls, although the nearest continental land mass in those directions lies some 8000 km to the west.

In relation to such a small land surface the present day plants and animals show a high degree of diversification and appear to have evolved from an estimated 700 ancestors which reached the islands from all directions. In the insects, probably 300 ancestors gave rise to the present day endemic species, which may number 10,000. However, although the Hawaiian birds are predominantly American and Holarctic in origin, it is evident that the ancestors of by far the great majority of plants and insects came from the Indo-Pacific region to the south and west. From here they were clearly aided in their dispersal by a multitude of Pacific islands, separated by less than 1000 km, which provided a "stepping stone" effect across the SW Pacific. The great unbroken ocean barrier to the east and north ensured that very little colonising of the islands took place from these directions.

There are several ways in which insects could be transported between the islands over distances of this order. Transportation by sea, attached to a variety of floating debris, could occur occasionally and probably accounts for some successful dispersals. It is also possible for insects to become attached to the feet, feathers and beaks of birds, and to be carried in this way for hundreds of kilometres. But it seems likely that most of the ancestors of the Hawaiian insects were transported by wind currents, as it has been shown that a remarkable number of small insects, spiders and mites can remain suspended in the air at heights of up to 5000 m above the ground. Winds of considerable force would be necessary to keep even small insects airborne over distances such as those involved, but hurricanes occur frequently in the SW Pacific and high altitude anti-trade winds blow strongly from the west in some latitudes. High velocity jet streams at higher altitudes than the anti-trades can almost certainly be disregarded as carriers of insects because the subzero temperatures which prevail at these levels would prove fatal to most organisms.

The absence from the Hawaiian fauna of many of the larger and heavier insects (for example, beetles of the family Scarabaeidae) tends to support this concept of airborne dispersal and gives an indication of its selective nature.

Those insects which survived these oceanic journeys found a new and open environment comparatively free of natural enemies and competitors in the Hawaiian Islands. Breeding colonies became established and a group of species, each unique and different from its colonising ancestors, evolved as various ecological niches were occupied and exploited in the virtual absence, initially at least, of competition and predation. Today some 10,000 species of insects are known to occur on the islands. That this number arose in the course of such a comparatively short biological history can be regarded as inevitable rather than remarkable, in view of the open and uncompetitive nature of the environment and the mainly amenable climate which has apparently prevailed on the islands since their formation.

In the many strange and interesting examples of adaptation and exploitation which are to be found, the environment for one is provided by a multitude of subterranean lava tubes, dark cavities in the basic rock material which were formed by hot gases early in

the islands' geological history. Here a complete food chain has become established, having as its beginning the roots of trees and smaller plants which have penetrated the tubes in search of moisture and nutrients. The primary consumers of this plant material include moth larvae; the predators or secondary consumers are represented by spiders and bugs, the scavengers by millipedes and crickets. Some animals in these habitats have lost their eyes or have eyes which are nonfunctional. On the other hand, antennae show increased development, as might be expected.

There are other examples of adaptive radiation, such as the longicorn beetle genus Plagithmysis, endemic to Hawaii and with almost 140 closely related species. All are believed to have arisen from a single North American ancestor. Each species is restricted to one island, and there are six species whose wood-boring larvae co-exist in a single native forest environment, each having adapted to a particular stratum or microhabitat within that environment. Also there is a flightless lacewing (Pseudopsectra sp.); a flightless, carnivorous grasshopper (Banza unica), and a damselfly whose nymph has adapted to a terrestrial or arboreal life in contrast to its relatives in other parts of the world. In the bugs, the strange Dictyophorodelphax is only 3 mm long and resembles one of the weevil beetles. Its mouthparts are produced into an elongated "snout", equal in length to the remainder of its body and containing parts of its digestive system, an arrangement that may be related to the fact that it feeds on the normally toxic juices of Euphorbia plants.

Perhaps one of the most unusual examples is provided by the carnivorous larvae of some geometrid moths (Eupithecia spp.). These larvae rest motionless on sticks and feed on flies which they capture by striking backwards when sensory hairs on their bodies are touched by the flies; however, the larva of at least one geometrid behaves "normally" and feeds on plants. The butterflies are perhaps disappointing, with little more than a dozen species of which only two are native. The fly genus Drosophila has been eminently successful; hundreds of native species appear to have evolved from one or two chance arrivals. Nowhere else do so many native species of this genus occur, a fact which is of considerable interest to biologists in the study of evolution and genetics.

Of course, this great diversification of species has not been restricted to insects. For instance, on the island of Oahu alone there are 1000 species of the land snail Achatinella, with habitats separated sometimes by a ridge or valley. The plant genus Cyrtandra has 160 species, some restricted to only one side of a mountain.

Clearly, these islands provide scientists with some admirable resources for the study of a whole series of biological subjects. There is also much to interest the casual naturalist and I suggest that should he visit Hawaii, he allows time to visit the absorbing display at the Bishop Museum, Honolulu.

SOME ENTREC RECORDS FOR STIGMODERA IN VICTORIA.

(COLEOPTERA: BUPRESTIDAE)

by Joy Burns, 3 Inglis St., Mornington.

Gordon and I have been concentrating on the distribution of the Stigmodera (Castiarina) (Coleoptera: Buprestidae) for the Entrec Scheme. The late Bill Mules' and most of our own collection has now been recorded. Not many, but an interesting beginning. The location maps are starting to show a distribution with either an overall, north western (Mallee) or south eastern scattering.

We carry a small notebook during our travels and record date, location and numbers of beetles observed to be included with our actual collected specimens. All information is written into a loose leaf folder for our own use before entering into the Entrec individual sheets.

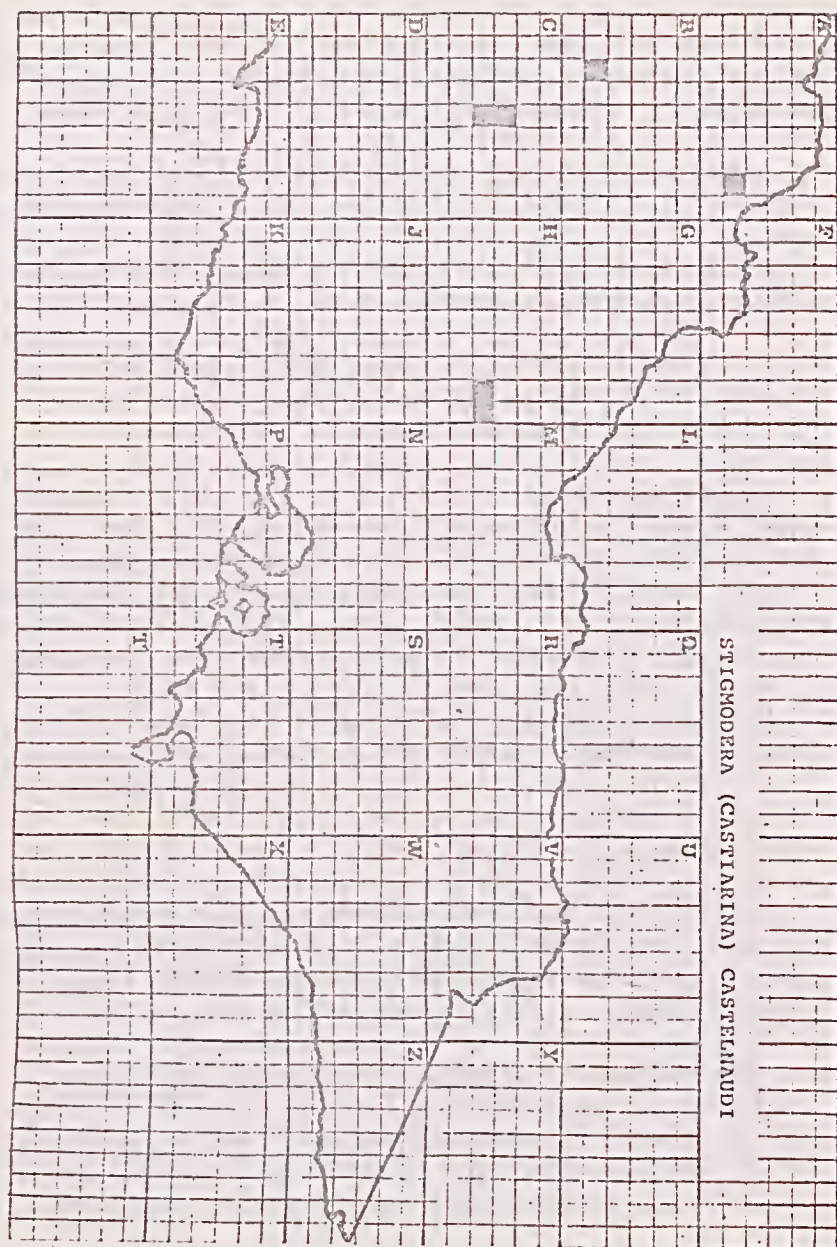
With over 900 map reference collecting areas we find that we have only covered 69 areas with a total of 96 species. As well as continuing with the Buprestidae we soon hope to make a start on the Cerambycidae.

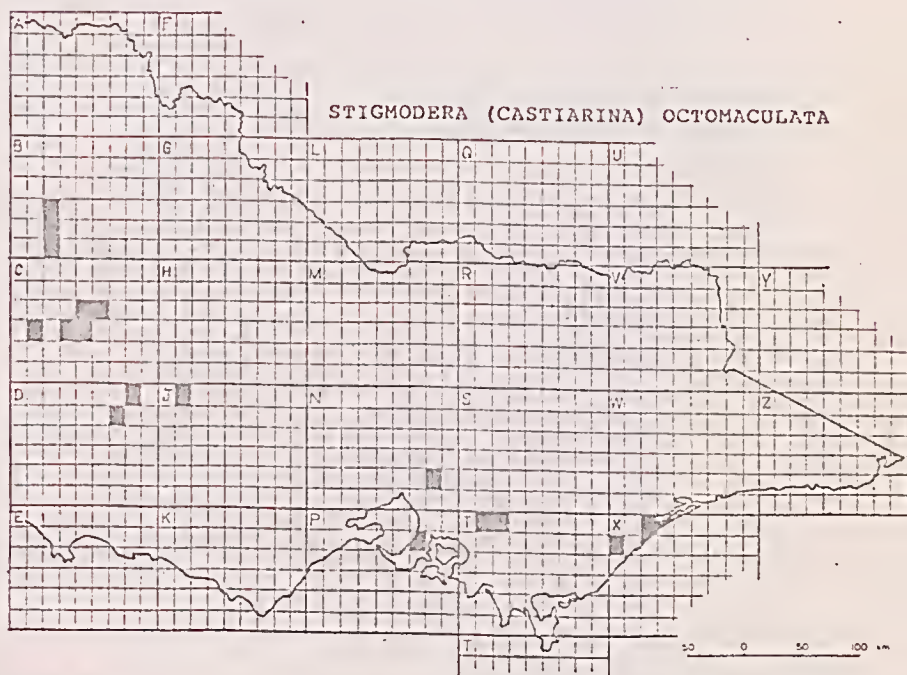
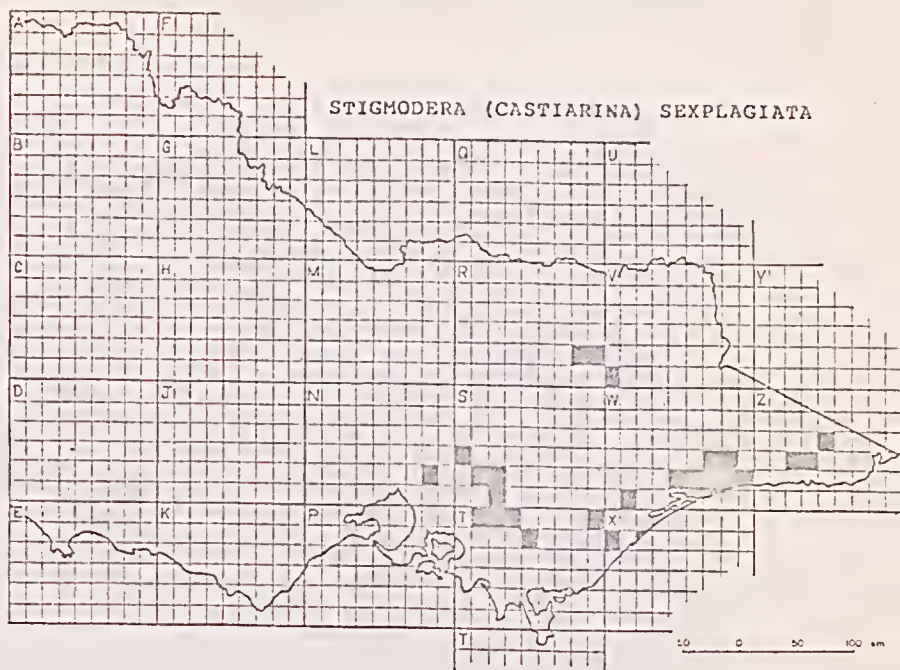
Maps included of: Stigmodera (Castiarina) castelnaudi

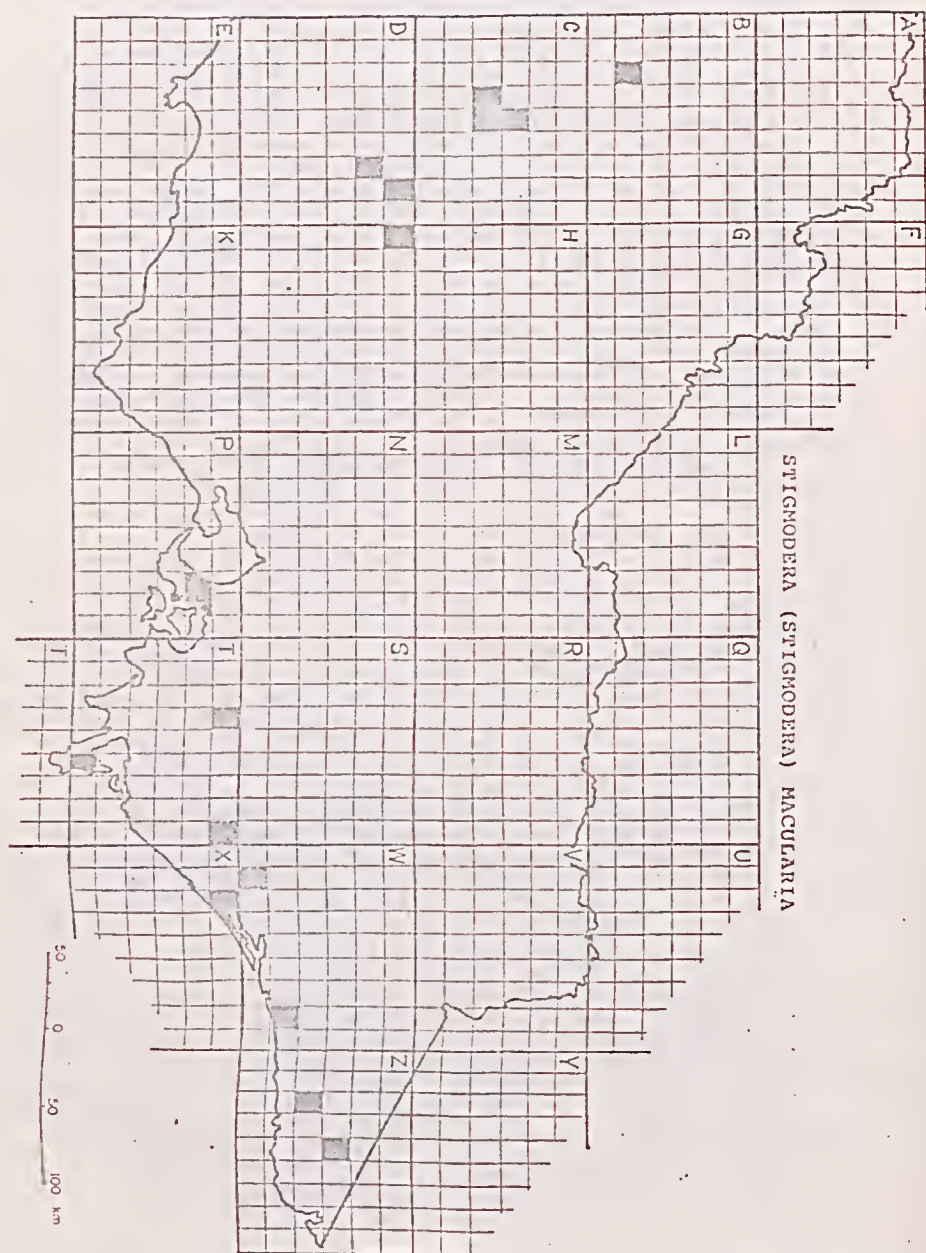
Stigmodera (Castiarina) sexplagiata

Stigmodera (Castiarina) octomaculata

Stigmodera (Stigmodera) macularia







MINUTES OF THE COUNCIL MEETING, 21 SEPTEMBER 1984

The meeting was chaired by the President, Mr. P. Carwardine and commenced at 8.00 pm.

Apologies: T.R. New, D. Holmes.

Present: G. & J. Burns, P. Carwardine, D. Crosby, I. Faithfull, M. Hunting, P. Kelly, M. LeSouef, D. Stewart, K. Walker.

Minutes: Minutes of the Council meeting of 20 July 1984 were passed. (D. Crosby/ G. Burns)

Correspondence: Detailed and received (D. Crosby/ K. Walker)

Treasurer's Report: Presented by G. Burns

General Account	\$ 970.54
Term Deposit	\$1500.00
Zoo LeSouef Memorial Fund	\$1374.67

Financial Members: 57.

Editor's Report: Ian Faithfull to take over as Editor.

- General Business:**
- (1) J. Burns was nominated Vice President (M. LeSouef/ K. Walker).
 - (2) Excursions Saturday 10th Nov. 1984
Lancefield district.
Sunday 3rd March 1985 Lorne district
 - (3) Junior Entomologists' Club deferred for want of a leader.
 - (4) A donation of \$90.00 was received for the Zoo LeSouef Memorial Fund.
 - (5) It was moved that our advertising leaflets be mailed with a covering letter to the Science Teachers of all metropolitan High Schools and Technical Schools at the beginning of the 1985 school year. (D. Crosby/ J. Burns)

The meeting closed at 10.00 pm.

EXCURSION TO LANCEFIELD DISTRICT

DATE Saturday 10th of November 1984

MEETING PLACE Kilmore toilet block on right hand side before shopping centre.

MEETING TIME 10.30 AM SHARP!

TRAVEL Via Hume Freeway and turn off onto Northern Highway just before Beveridge. Kilmore is 69 km from the GPO Melbourne, allow one hour travelling time.

Excursion Will depart 10.35 AM via Willowmavin to Mt. William (NE of Lancefield), later heading to Pyalong, covering some 60 km before returning to Kilmore.

MAPS Broadbent No. 301 150km around Melbourne.
Dept of Minerals & Energy 1:250,000 MELBOURNE SJ55-5
Dept of Minerals & Energy 1:100,000 W000EN0 7823

FOOD & PETROL Available at Kilmore.

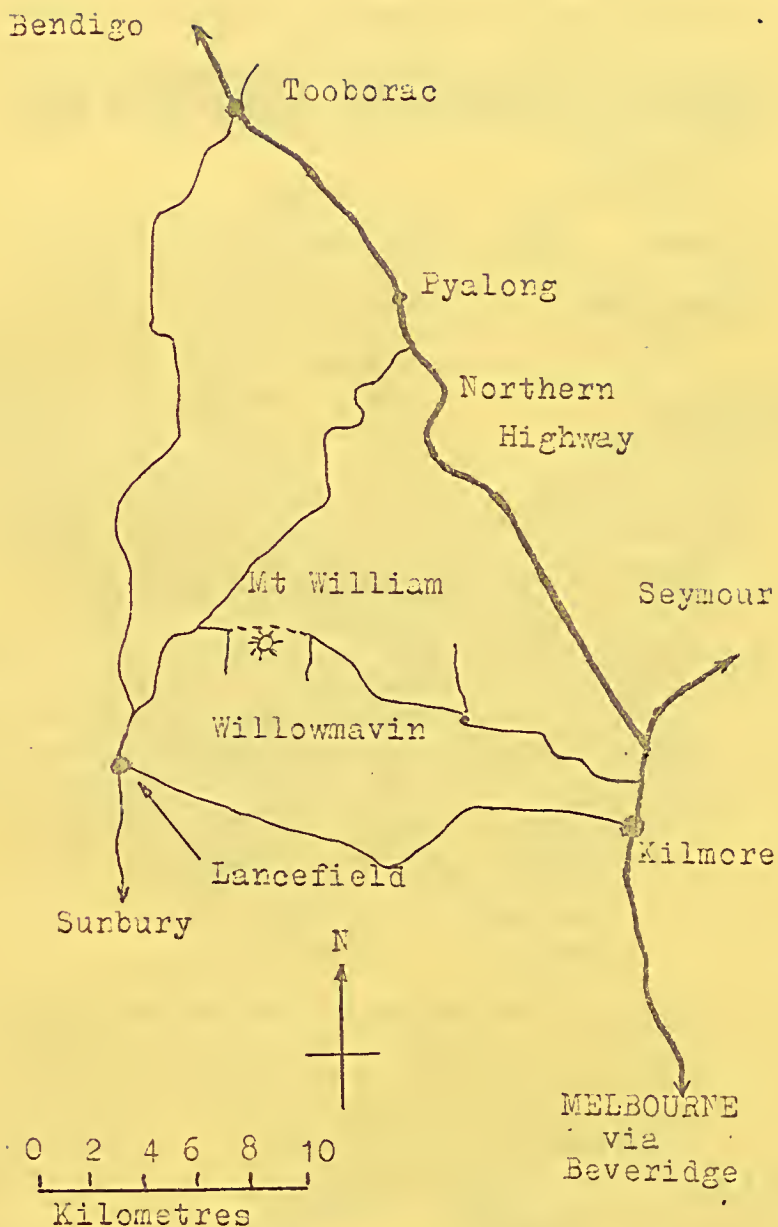
POLICE Powlett St. Kilmore 82 1211 (or Seymour 92 1211).

DOCTOR Kilmore Clinic 28 Victoria St. Kilmore 82 1933.
S.C. Jain 16 Sydney Rd, Kilmore 82 1529.

HOSPITAL Kilmore 82 1311.

ENQUIRIES AND TRANSPORT: P. Carwardine 509 0622 Work
211 8953 Home

MAP ON NEXT PAGE



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OFFICE BEARERS

President	-	Peter Carwardine, 2a Victoria Road, Malvern Telephone - 211 8958
Vice-Presidents	-	Joy Burns, 3 Inglis St, Mornington Telephone - (059) 75 3730
	-	R. Condron, 96 Shannon St, Box Hill Nth Telephone - 89863DD
Hon. Secretary	-	Dr Tim New, Zoology Dept., LaTrobe Uni., Bundoora Telephone - 71810D7 (HM) 4792247 (UNI)
Hon. Treasurer	-	Gordon Burns, 3 Inglis St, Mornington Telephone - (059) 753730
Hon. Editor	-	Ian Faithfull, 83 Easey, St, Collingwood
Excursion Secretary	-	Peter Carwardine, 2a Victoria Rd, Malvern
Past President	-	Peter Kelly, Lot 6, Dockery's Rd, Tallarook, 3659 Telephone - (057) 93 823D
Councillors	-	Mesdames Joy Burns, Mary Le Souef, Messrs David Crosby, L. Dunn, D. Holmes, M. Hunting, D. Stewart, K. Walker.

DIARY OF COMING EVENTS

October 19th	-	Talk by Dr. T. New
November 16th	-	Council Meeting

The issue of this document does NOT constitute formal publication. It should not be reviewed, abstracted or quoted from without the consent of the author or the Council of the Victorian Entomological Society. Authors alone are responsible for the views expressed.



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VOL. 14 NO. 6



DECEMBER 1984

VICTORIAN ENTOMOLOGIST



Registered for posting
as a periodical Category B
Price \$1.

Journal of
The ENTOMOLOGICAL
SOCIETY of VICTORIA

THE ENTOMOLOGICAL SOCIETY OF VICTORIA

MEMBERSHIP

Any person with an interest in Entomology shall be eligible for Ordinary Membership. Members of the Society include professionals, amateur and student entomologists, all of whom receive the Society's Journal, the "Victorian Entomologist".

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species and
- (d) to bring together in a congenial but scientific atmosphere all persons interested in Entomology

MEETINGS

The Society's meetings are held at Clunies Ross House, National Science Centre, 191 Royal Parade, Parkville, Victoria, at 8 pm on the third Friday of even months, with the possible exception of the December meeting which may be held earlier.

Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with like interests. Forums are also conducted with short addresses by members on their particular interest so that others can participate in the discussion.

ANNUAL SUBSCRIPTIONS

Ordinary Member.....	10.00 (Aust)	Approx 11.50 (U.S.)
Student, Associate.....	5.00 (Aust)	" 5.75 (U.S.)

JOURNAL POSTED SURFACE MAIL

No additional fee is payable. Associate Members, resident at the same address as, and being immediate relatives of an Ordinary Member do not automatically receive a copy of the Society's publications, but in all other respects rank as Ordinary Members.

CONTRIBUTIONS TO THE "VICTORIAN ENTOMOLOGIST"

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of Entomology for publication within the Journal. Contributions are not restricted to Members, but should be responsible and original. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

When contributions are typed it would be of great assistance if they were typed on A4 (International quarto) paper, single spaced with double spacing between paragraphs with a margin of 3 cm.

ADVERTISING: Five dollars per half page

Cover design by G. Milledge. Danaus plexippus plexippus (life size) on map of Victoria.

MINUTES OF THE GENERAL MEETING, 19 OCTOBER 1984

The President opened the meeting at 8.10 pm.

Apologies: G. and J. Burns, M. Hunting.
Attendance: K. Clark, D. Crosby, R. & J. Field,
D. Gooding, D. & J. Holmes, P. Kelly,
T. New, M. Le Souëf, D. & N. Stewart,
K. Walker.

The President introduced Dr. Ross Field to talk on "The European Wasp". After a wide-ranging talk, covering the history, spread, biology and likely control of Vespula species in Australia - together with exhibits of wasps, a large nest and poster material - and considerable discussion, the speaker was thanked by the President.

Minutes: April and August general meeting minutes passed (P. Kelly/J. Field and M. Le Souëf/D. Stewart respectively).

Correspondence: Received (D. Holmes/R. Field).

Treasurer's Report: G. Burns submitted a written statement, as follows: General Account - \$833.74
+ \$1500 term deposit
Memorial Fund - \$1506.48

Editor's Report: On behalf of the incoming editor, K. Walker appealed for notes and articles.

Excursions: P. Carwardine gave further details of the proposed Lancefield excursion, and noted the likelihood of a trip to the Lorne area in March. M. Le Souëf commented on the 13 species of butterflies found around Lorne in a trip in March in 1980.

Exhibits and Notes: i) D. Holmes from his recent trip to Queensland; i) A painting by Nola Manskie of Delias; ii) Colour photographs of Ray & Nola Manskie, Jo Manskie and the Maryborough Festival; iii) One of four drawers of set specimens collected on the trip, including a number of unusual skippers and lycaenids.

- 2) D. Crosby. A shelter of Hesperilla flavescens from Altona which had been opened. Comment suggested that this could be caused by a small mammal, possibly Sminthopsis.
3) R. Field noted the appearance of Pseudamenus chlorinda.

The meeting closed at 9.45 pm.

T. New,
Hon. Secretary.

COUNCIL MEETING

The Council Meeting scheduled for November 16 was cancelled due to the lack of sufficient business.

DECEMBER MEETING

The December Meeting is the annual Member's Night and Christmas Breakup. Members are kindly requested to bring a plate of sandwiches, cakes or other food and an exhibit.

A NOTE FROM NEWCASTLE

Andrew Atkins, 45 Caldwell Ave, Dudley, N.S.W., 2290

Among the more common butterflies frequenting my garden at Dudley is Candalides consimilis consimilis Waterhouse. This Lycaenid is known to have a wide range of larval foodplants both native and exotic.

Last month (October) I noticed a female of this species flying around several of my garden flowers but repeatedly returning to a Honeysuckle vine (Lonicera sp.; CAPRIFOLIACEAE). The butterfly was found to be ovipositing on the young foliage of this plant. If Honeysuckle proves to be a common foodplant of C. consimilis, the subspecies goodingi (Tindale) might well be expected to extend its range through the eastern suburbs of Melbourne, the most easterly occurrence to date being in the Dandenong Ranges.

ODONATA OBSERVED IN THE BIG DESERT, VICTORIA, NOVEMBER 1984

Ron Garrett, Plant Research Institute, Swan St., Burnley, Vic., 3121

Two species of dragonfly and one species of damselfly, all widespread in Australia, were observed in the Red Bluff Wildlife Reserve, the Big Desert Wilderness Area and areas of South Australia immediately adjacent to the Border Track from November 3 to 7 of this year:

Xanthagrion erythroneurum Selys A damselfly with red thorax and a blue tipped abdomen. One specimen taken on the Border Track about 13 km north of the Red Bluff track.

Hemicordulia tau Selys Seen in a depression to the west of Red Bluff. Not common. One female specimen.

Diplacodes haematodes (Burm.) Common in the Red Bluff area, the Wilderness Area and across the border but females only were seen.

RESEARCH IN NATIONAL PARKS : GENERAL POLICIES AND CONDITIONS

A number of members of the Society hold or have held Research Permits issued by the National Parks Service of Victoria and have contributed to our knowledge of the insect fauna of the areas controlled by the Service. The following policies and conditions governing Research Permits are reprinted for the benefit of those unfamiliar with the correct procedures. Members are reminded that all living things are protected within National Parks and that the removal of insect specimens leaves the collector liable to prosecution.

POLICY GOVERNING THE ISSUE OF RESEARCH PERMITS FOR CONDUCTING SCIENTIFIC WORK IN PARKS UNDER THE CONTROL OF THE VIC- TORIAN NATIONAL PARKS SERVICE

1. A research permit must be obtained before any scientific work can be carried out within the boundaries of any park under the control of the National Parks Service. All projects and surveys in the biological, earth, physical and social sciences are included in this requirement.
2. A research permit will be issued only to bona fide research workers to conduct work in parks where it can be demonstrated that this work could not be conducted in other areas.
3. Where research is considered valuable in producing basic information applicable to park management, special consideration may be given to issuing a permit.
4. Amateur scientific work will generally not be considered unless the application is supported by a professional referee.
5. Applications for research permits must be made in writing to the Director of National Parks. Application forms are available upon request from the National Parks Service. Such applications should include the following information:
 - a. Full name of applicant
 - b. Business Address
 - c. Business and private telephone numbers
 - d. Organisation with whom the applicant is affiliated and

- position held within that organisation
- e. Brief description of the proposed research programme indicating the reasons why work should be done in a park and the purpose for which it is to be undertaken
 - f. A specific plan of the proposed project
 - g. Precise details, including quantity, of any biological, geological or other specimens required
 - h. Any appropriate professional references. Undergraduate and graduate students should give the name of their research advisor or faculty member supervising their work.
- N.B. Applicants are advised to allow at least thirty days for their application to be considered before planning any proposed field work in a park.

GENERAL CONDITIONS GOVERNING RESEARCH
PERMITS FOR CONDUCTING SCIENTIFIC WORK
IN PARKS UNDER THE CONTROL OF THE VIC-
TORIAN NATIONAL PARKS SERVICE

- 1. Provisions of the National Parks Act and Regulations are to be fully observed.
- 2. Any necessary licences are first to be obtained from the Fisheries and Wildlife Division and Forests Commission of Victoria.
- 3. The Park Ranger is to be advised prior to each activity.
- 4. Work is to be conducted, where possible, away from the public view.
- 5. Disturbance to the environment should be minimal.
- 6. A written report* of all scientific work conducted is to be forwarded the Director of National Parks within thirty days of the expiration date of the research permit. This report should include all details of all biological or geological specimens collected. Requests for the extension of a research permit will be considered only after this requirement is met/
- 7. A copy of any scientific publication of thesis resulting from research carried out in a park or relevant to the interests of the National Parks Service is to be forwarded

to the Director of National Parks within thirty days of its availability or publication.

8. Where a research project involves more than one worker or a group activity, all work is to be directly controlled and supervised by the permit holder who shall be deemed responsible.
 9. The research permit must be signed upon receipt and carried by the permit holder whilst undertaking any work in any park named on the permit and shown on demand to any Authorised Officer of the National Parks Service.
 10. Type specimens remain the property of the Government and must be lodged in Australia at a recognised institution and may be subject to a direction by the Service in this regard.
- * The Service is entitled to copy information in the report as necessary for distribution to staff of the parks referred to in the permit.

PROTECTED BUTTERFLIES

Ogyris otanes C. and R. Felder

Ogyris idmo halmaturia Tepper

In December 1973 the Entomological Society of Victoria placed these butterflies in a "Limited Voluntary Protection" category which is still in place. The cooperation of members is requested in the observation of the recommended restrictions :

1. That no more than two specimens be netted by any one collector within any one season.
2. That no larvae or pupae be collected at any time.

EUPRESTIDAE : RECORDS FOR SPRING 1984

Joy and Gordon Burns, 3 Inglis St., Mornington, Vic, 3931

Our 1984 -85 collecting season started with a visit to the Big and Little Deserts in north west Victoria. Due to the mild and wetter spring the flora appeared to be about three weeks later than normal. Most of the common Euprestidae emerged but in much smaller numbers than usual.

Those observed and recorded for ENTRECS were Stimodera macularia, S. sanguinosa, S. pubicollis, S. adalaidae, S. aeneicornis, S. argillacea, S. decemmaculata, S. gibbicollis, S. jospilota, S. kiatae, S. kirbyi, S. octomaculata, S. pallidiventris, S. parallela, S. picta maleeana, S. recta, S. simulata, S. triramosa, S. vegeta, S. vittata and S. xanthopilesa.

After returning home the warmer weather brought out S. cuoreoflava, a species we had been looking to find for years. This was on the local Mornington foreshore.

On other trips S. australasiae, S. coeruleipes, S. sexguttata, S. sexplagiata and S. victoriensis were recorded as well as four species of Anilare, one of Ethon, two of Melobasis and one of Pseudanilare.

Although the actual number of beetles was not high, it was surprising how many species were actually recorded, making the season appear not too far from normal.

THE 1984 CAPER WHITE MIGRATION IN MELBOURNE

After learning from me of the massive Caper White migrations which occur in Australia and having a few of the butterflies pointed out to him in north west Victoria early in November, my brother Tony Faithfull made some observations of obvious population movement at Athelstan Rd. Camberwell on November 18. During the early afternoon there was little wind and the weather was warm. Anaphaeis java teutonia was seen travelling roughly west at the rate of about one per minute.

Continued p. 69

BUTTERFLIES FROM THE FOLEY ROAD AREA, YANAKIE
SOUTH GIPPSLAND, VICTORIA

Ian Faithfull, 83 Easey Street, Collingwood, Vic., 3066

During irregular visits totalling 29 days between September 1982 and October 1984 to the Foley Rd. area at Yanakie fifteen species of butterflies have been observed. This is a smaller number than I have seen in inner suburban Melbourne over the same period and provides some indication of the impoverishment of the fauna. All species recorded are within their known ranges and none are unusual.

Foley Rd. is situated on the Wilson's Promontory isthmus about 4 km south east of Yanakie. It leads off to the north east through cleared grazing land towards Duck Point, a camping ground and the Yanakie rubbish tip, which is near the end of an unnamed sandy point. To the south of the road is a narrow strip of remnant vegetation dominated by Swamp Gum, Eucalyptus ovata, Scented Paper-bark, Melaleuca squarrosa and Swamp She-oak, Casuarina pulidosa or by Saw Banksia, B. serrata. Where the road approaches Corner Inlet the vegetation strip broadens out to occupy the area from the shore of the inlet to the road edge. Between Wilson's Promontory National Park to the south and the Hoddle Ranges to the north west there are but few scattered remnants of native vegetation, mostly on road verges.

The area is known for its cold, wet and windy conditions and I have encountered relatively few periods when butterflies have been common. A monthly compilation of results is presented in the accompanying table. There have been no sightings from May to August inclusive and I have made no observations in November. Most of the observations have been made in the privately owned south western section of the vegetation strip. Nomenclature adopted is that used by Common and Waterhouse (1981).

Dispar compacta (Butler). A single specimen seen in remnant woodland on 20 February 1983. Three others were seen on 29 January this year on flowers of Eucalyptus ovata (apparently feeding), Goodenia ovata and a species of Senecio.

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
<i>Dispar compacta</i>					X	X		
<i>Hesperilla donnyssa</i>				X				
<i>Taractrocera papyria</i>				X				
<i>Delias harpalyce</i>					X			
<i>Anaphaeis java</i>				X				
<i>Pieris rapae</i>		X		X	X	X		X
<i>Danaus plexippus</i>					X			
<i>Geitoneura klugii</i>				X	X	X		
<i>Heteronympha merope</i>				X	X	X	X	X
<i>Tisiphone abeona</i>				X	X	X		
<i>Vanessa kershawi</i>	X	X		X	X			
<i>Vanessa itea</i>				X	X			
<i>Candalides hyacinthus</i>					X			
<i>Lampides boeticus</i>		X						
<i>Zizina labradus</i>				X	X	X	X	X

Hesperilla donnyssa patmos Waterhouse. Observed on only one occasion, 27-28 December 1982 when three or four were seen in a very sheltered grassy position at the bottom of the slope. Common and Waterhouse (1981) state that there are two generations annually with adults on the wing during November and early December and again in February and March. The exceptional drought conditions of the summer of 1982 may account for this anomalous record.

Taractrocera papyria papyria (Boisduval). A single old worn male was captured in regenerating samphire growth on December 27, 1982.

Delias harpalyce (Donovan). Seen several times in late January 1983 flying rapidly along the tree line. Perhaps a single individual repeatedly cruising the several km vegetation strip. Mistletree is very scarce on the Swamp Gums and no juvenile stages have been found.

Anaphaeis java teutonia (Fabricius). One male was seen travelling north east on 28 December, 1982. The Wilson's Promontory route may well be important for the occasional individuals that reach Tasmania, however the last massed flights I have seen in southern Victoria (Melbourne, late 1981) were prior to the commencement of the Yanakie observations so it will be interesting to see what happens when high numbers are present in other areas south of the divide.

Pieris rapae (Linnaeus). Generally scarce, occasionally common.

Danaus plexippus (Linnaeus). One seen at the rubbish tip 29 January, 1984, flying north east.

Geitoneura klugii klugii (Guérin-Ménéville). In December and January the commonest butterfly but by February many specimens are very pale in colour and they are rather scarce.

Heteronympha merope merope (Fabricius). Common in the summer.

Tisiphone abeona albifascia Waterhouse. A healthy population but I have only once seen it outside the scrub and interchange with neighbouring populations would seem to be difficult.

Vanessa kershawi (McCoy). Usually a few seen when the weather is warm but absent from 29-31 January 1983.

Vanessa itea (Fabricius). Not recorded from September 1982 to October 1983. Single specimens were seen in December 1983 and January 1984 and breeding may occur as occasional groups of Urtica urens, the introduced stinging nettle, are present.

Candalides hyacinthus hyacinthus (Semper). One male was captured on the edge of taller Eucalypt forest close to plants of the local Cassytha in January 1983.

Lampides boeticus (Linnaeus). No records except for a single battered specimen seen on 18 October this year. Directional population movement of the species was noted in Melbourne in October. A number were seen in Abbotsford on 9 October moving in a south easterly direction and on the 14 October several were observed in the Melbourne Botanic Gardens moving in a south westerly direction. Common and Waterhouse suggest that the spasmodic occurrence of the Pea Blue in Tasmania may be due to migration from the mainland.

Zizina labradus labradus (Godart). Vying with G. klugii for the status of the commonest butterfly.

Reference

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Dr. Ramsay, D.S.I.R. Entomology Dept., Private Bag, Auckland, N.Z.

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THE 1984 CAPER WHITE MIGRATION IN MELBOURNE

From p. 63

The butterflies flew in low from the east over the garage and seemed to be attracted to the lemon tree in flower and the grape vines. In about 15 minutes of observations at 3 pm twenty or thirty were seen, of which three quarters went west, one quarter south and one individual went north. The following day there were fewer but the direction of movement remained the same.

On November 21 a cool change arrived but, also at Camberwell, I observed two dark females travelling NNW about 4 pm. On the 22nd between 1.45 and 2.50 pm, with the wind from the SSW, six dark females were seen moving on headings from SW to NNE. A close watch in the back yard from 4.00 to 4.15 revealed no butterflies on the wing. A single male was seen on the 24th and none at all on the 25th.

Ian Faithfull

DIARY OF COMING EVENTS

Continued from back page

- 15 February, 1985 - Talk by Dr. Tim New : Impressions of New Guinea Lepidoptera
- 24 Feb/3 Mar, 1985 - Likely Excursion, Lorne Area
- 15 March, 1985 - Council Meeting
- 19 April, 1985 - Dr. Fred Neumann : Forest Entomology
- 17 May, 1985 - Council Meeting
- 21 June, 1985 - Annual General Meeting

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President	- Peter Carwardine, 2a Victoria Road, Malvern, 3144. Telephone - 211 8958
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DIARY OF COMING EVENTS

14 December, 1984 - Member's Night and Christmas Breakup
Continued inside back cover

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